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VIEW IN THE FALL RANGE.

SEVEN YEARS' RESIDENCE

IN THE GREAT

DESERTS OF NORTH AMERICA

BY THE

ABBÉ EM. DOMENECH

Apostolical Missionary : Canon of Montpellier : Member of the Pontifical Academy Viborina, and of the Geographical and Ethnographical Societies of France, &c.

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ILLUSTRATED WITH FIFTY-EIGHT WOODCUTS BY A. JOLIET, THREE PLATES OF ANCIENT INDIAN MUSIC, AND A MAP SHOWING THE ACTUAL SITUATION OF THE INDIAN TRIBES AND THE COUNTRY DESCRIBED BY THE AUTHOR

In Two Volumes

VOL. I.

I. d. 1

LONDON

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TO HIS LORDSHIP

CHARLES THOMAS THIBAULT,

BISHOP OF MONTPELLIER, ROMAN COUNT, ASSISTANT AT THE PONTIFICAL THRONE, COMMANDER OF THE IMPERIAL ORDER OF THE LEGION OF HONOUR, AND OF THE RELIGIOUS AND MILITARY ORDER OF SAINTS MAURICE AND LAZARUS, KNIGHT GRAND CROSS OF THE HONOURABLE ORDER OF CHRIST OF ROME, OF THE ROYAL ORDER OF CHARLES III. OF SPAIN, AND OF THE ORDER OF THE HOLY SEPULCHRE, ETC.

My Lord,

When I dedicated my first book to the Bishop of Texas, I discharged a very natural debt. In dedicating the present work to your Lordship, I rejoice in the fulfilment of a most pleasing duty of gratitude.

I shall ever remember the great kindness of your reception when, on my return from the New World, I was preaching in France in order to enlist the sympathy of my countrymen for my much-loved savages; nor shall I forget how you loaded me with benefits which I could only ascribe to the liberal impulse of your own excellent heart. When at a later period, worn out by my missionary labours, I tried my first timid steps in the paths of literature with no guide or stimulus but stern necessity, your hand alone was extended to me in friendly support; and further to encourage my efforts you raised me to the rank of a Canon of your Cathedral. In thus honouring me, my Lord, you yielded to the generous inspiration of a lofty soul. I was solitary, friendless, unknown; you saved me from all those afflictions, bestowing on me the protection of one of the Bishops of France, whose admirable eloquence, zeal for the welfare of the Church, and benevolent sympathy towards all who are in adversity, has ever shed the greatest honour and truest glory on the house of God.

My Lord, leaving others to shine in the false glare of a deceitful light, you have followed, perhaps unconsciously, the only road that leads to real greatness. No one better than your Lordship has understood how noble is the task of smoothing the way for young intellects, and removing those obstacles which often subdue their courage and sadden their hearts at the very outset of their career. You felt that to tender assistance to those who are struggling to make available the talents which God has bestowed upon them, while they sustain too hard a combat with the material difficulties of their position, is verily to continue the part of divine Providence on earth.

Gratitude, my Lord, is in itself so sweet a feeling that we ought always to bless those who inspire it; but there are selfish and inconsiderate beings with whom all feelings are but empty words, and to whom the weight of gratitude is in reality a heavy burthen. It is therefore not by words too easily uttered, or by doubtful protestations that any man's gratitude ought to be measured, but by positive facts, spontaneous actions, resolves perseveringly matured, in short by all those proofs which spring from a free heart and a firm will, and which bear the unmistakable stamp of truth.

My Lord, at the present time, when a pharisaical spirit is endeavouring to malign you, heedless of adding rays to your glory by making you share in that cup of bitterness which was held to the lips of our Divine Saviour in the garden of Gethsemane, more than ever should I rejoice if, when I inscribe your Lordship's name on the first page of this book, which I have written to make known the wildernesses of the New World and their inhabitants, you should be pleased to accept this homage as a proof of my deep gratitude for the benefits received at your hands, of my sincere admiration for your Christian and episcopal virtues, and of the respectful attachment of,

My Lord,

Your most devoted humble servant,

EM. DOMENECH,

TITULARY CANON OF MONTPELLIER.

PARIS, April 1860.

PREFACE.

THE flattering manner in which the public received, two years ago, my first work, entitled "Missionary Adventures in Texas and Mexico," has induced me to continue the publication of my ethnographical studies, and of the precious notes I gleaned during my sojourn in the New World, on the nature, the aspect, and the singularity of the American deserts, as likewise with regard to those savage tribes who are as varied in their physical appearance, as they are similar in their civil and religious organisation. America, it must be avowed, is not solely an El Dorado for freebooters and fortune-seekers; it resembles the Promised Land, whose fertility was such that the fruits it produced surpassed, both in size and beauty, all that the Oriental imagination of the Hebrews could conceive: but, like the Promised Land of Scripture, few persons have gone thither to gather the fine fruits of science. For many ages, the entire of Europe, Asia, and the inhabited portion of

Africa have been known to us; and we have become familiarised with their history and geography. Archæologists, geographers, naturalists, and savants have overrun those three parts of our globe, and have initiated us into their secrets moral, historical, and material; but America is still a vast desert, to which missionaries, merchants, and some rare scientific expeditions have alone penetrated. Its history, its geography, and its geology are yet wrapped in swaddling clothes. It is now three hundred and sixty years since this New World was given us by Christopher Columbus, and much more has been done during that period in extracting its natural resources for the enrichment of our old Europe, and in propagating the blessings of Christianity among the semi-civilised and the savage tribes of those immense solitudes, than in searching into the mysteries which envelop those populations so worthy of special interest. The efforts that have been made for this purpose are in general tainted with partiality. From vague and insignificant data, inexact and arbitrary conclusions have been drawn, whose insufficiency or exaggeration, if not their falsity, is every day brought to light by experience and more extensive information.

Orthodox believers have naturally wished to link the primitive history of America with the biblical narrative. Arbitrary in their religious convictions, they have introduced this feeling into their discussions, without reflecting

on the many difficulties they would meet with, owing to the want of historical documents, and the not taking into account the plausible arguments that tell against them in the logic of facts. Infidel writers, on the other hand, have contested rashly and at random, the biblical narrative. Grounding the motive of their actions, of their thoughts, and of their mode of looking at everything, on isolated facts, on information generally superficial and often erroneous, on materials incomplete and of spurious value, they have erected against Genesis an edifice of sand, which the slightest touch of a competent hand would cause to crumble instantaneously. Some pass rapidly over every point that perplexes them; in their idea the Bible says everything, and whatsoever it does not say does not exist; they pay little attention to deficiencies which true, honest, and loyal science might fill up. Others, on the contrary, stop at the most trifling difference they find between the facts presented by science and the narrative of Genesis; and, rather than give themselves the trouble of reconciling this difference by study, or by seeking a judicious interpretation of that which at first seems a flagrant contradiction, they loudly proclaim that the Bible is wrong, and that it is filled with historical errors.

Men who search after truth such as it is, and not such as they would wish it to be, convinced that there is only one truth, inasmuch as there is but one God from whom it emanates, disdain this tortuous path pursued only by

weak minds imbued with prejudices, be they good or bad; wisely avoid these two extremes, to which the impassioned have recourse; and courageously penetrate into the depths of the unknown, not with preconceived notions, but with a firm desire to arrive at the end of their researches, without allowing themselves to be influenced by their religious, scientific, or philosophical convictions, which are of no avail in presence of the overwhelming authority of facts.

But, in the commencement of my work, I shall again revert to this antagonism, which has been carried too far by writers on both sides of the question. I say carried too far, because, in the question of the origin of the American peoples, the partisans, as well as the adversaries, of the Bible had only to cast their eyes on a map of America, to be convinced that there was still too much wanting to enable us to pronounce a sound judgment on this subject; and that the vast solitudes, as yet almost unknown, might contain many important documents which would infallibly throw light upon the question at issue. Like Christopher Columbus, who, on beholding the immensity of the seas, exclaimed, "There must be a continent in the Atlantic," we should have said, in surveying the immensity of the deserts, which extend from the Mississippi to the Pacific, "Yonder there must exist monuments and unknown populations." And in those wildernesses there are actually to be found hieroglyphical monuments,

immense ruins; white, red, and brown Indians; Albinos, bearded men, and men without beards; whose particular types differ from the general type of the tribes inhabiting the United States, Central America, and South America, which latter tribes form the staple of all the ethnological discussions that have arisen down to the present day.

America is then, comparatively speaking, a new country, a virgin land, which contains numerous secrets; we shall even add that many years must yet elapse before it can be perfectly known. The Government of the United States, to its praise be it said, spares neither trouble nor sacrifice to acquire this knowledge: of late years it has sent scientific expeditions into the American deserts, whose reports have been most useful to me in the compilation of my work. In giving publicity to this summary of my labours and travels, I have had no other intention than to shed a little light on the question of the origin of the American people, on the Indian tribes, and on the nature of the countries occupied by the more or less savage populations of the New World.

This work is but a detailed programme of what I hope to publish gradually on this subject; I have spared neither fatigue nor labour to give my readers an exact idea of the great wildernesses of America and of the Indian tribes they contain. If I have not been able to derive much help from the books published by some writers who have treated on this subject, it is be-

cause their accounts are, generally speaking, exclusively confined to the Indians of the United States. Nevertheless, I have read attentively the works of all those authors, either to generalise my opinions or to complete my narrative. Messrs. Schoolcraft's and Catlin's publications, those of the Smithsonian Society and of the Ethnographical Society of New York, as likewise the reports of the scientific expeditions made by order of the Government of the United States, were of especial service to me, which I am glad to acknowledge. I must also express my gratitude to Mr. Alexander Vattemare, founder and director of the International Library, which, thanks to his admirable management, is so deserving of the protection of every government and of the encouragement of every writer. By this means I have had at my disposal several foreign works, which the national libraries do not possess, and which have been of the utmost help to me.

The extent of my plan has obliged me to adopt the descriptive rather than the narrative style, and I have deemed it advisable to divide my work so as to unite in successive chapters whatever appertains to the same subject. After having treated the subject generally, I have given in detail all such particulars as tend to modify its general character.

My object has been to instruct and to interest the reader, without seeking to dazzle him by an appeal to

his imagination. My task thus simplified has become easy, and, if my work is wanting in details, I trust it will be found complete in the main, by making known the great deserts of America and the strange populations that dwell therein.

London, July, 1860.

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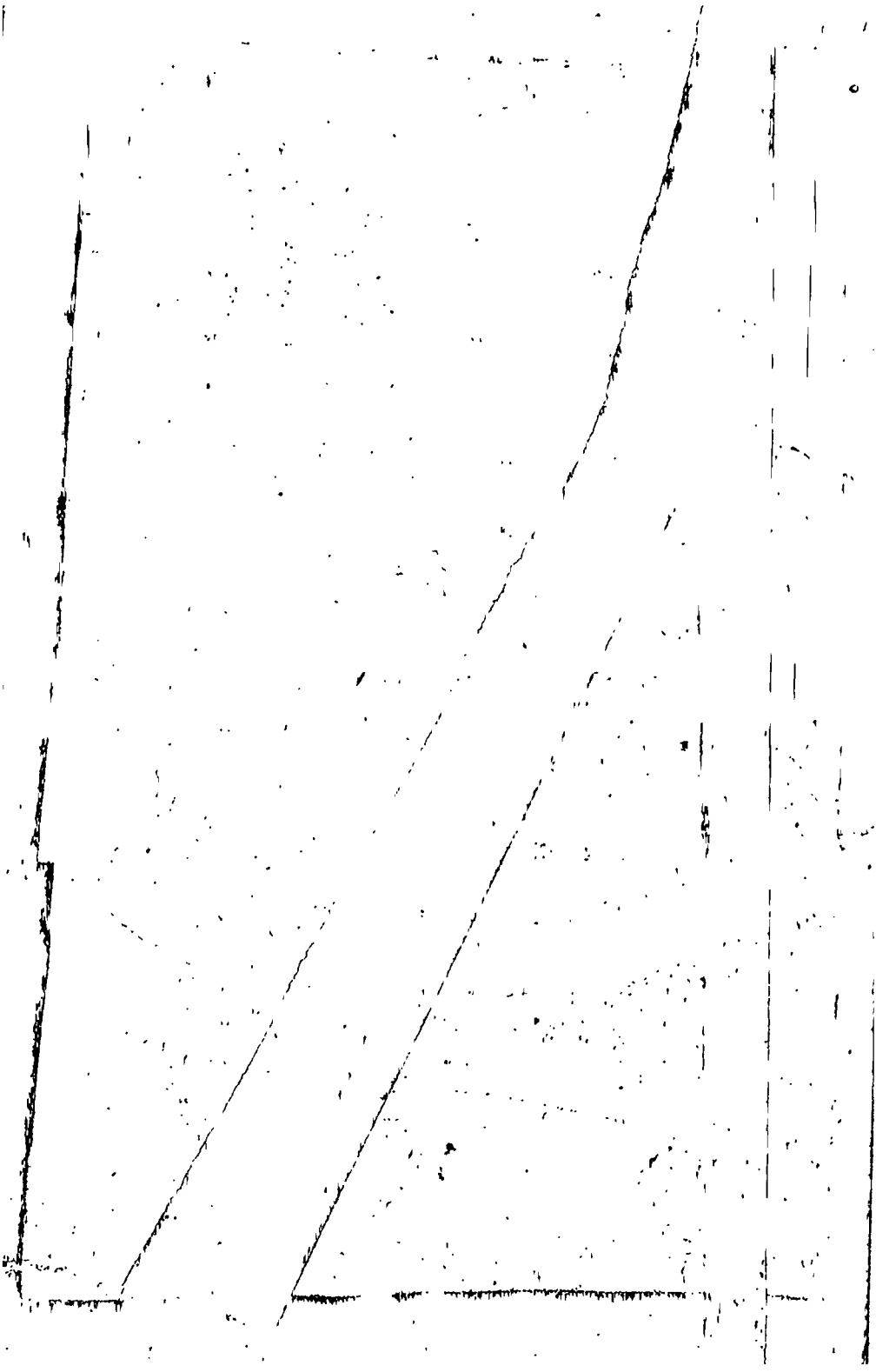
MAP DRAWN
THE ABBE DOMENECH
INDIAN TRIBES
OF
NORTH AMERICA
BRITISH TERRITORY
GULF OF MEXICO



SEVEN YEARS' RESIDENCE

IN THE

GREAT DESERTS OF NORTH AMERICA.

PART I.

ANCIENT EMIGRATIONS.

CHAPTER I.

GLANCE AT INDIAN ETHNOGRAPHY. — DIFFERENT OPINIONS OF WRITERS. — ORIGIN OF THE INDIANS. — ANCIENT EMIGRATIONS. — HIATUS IN BIBLE HISTORY. — ADVANTAGE TO BE DERIVED FROM THE STUDY OF THE ANCIENT EMIGRATIONS. — CHRONICLES OF EOLUS. — SCYTHIAN EMIGRATIONS. — MARITIME VOYAGES OF THE PHŒNICIANS. — VOTAN. — EXPLANATION OF HIS HIEROGLYPHICAL MANUSCRIPT. — VOTAN'S ARRIVAL IN AMERICA ONE THOUSAND YEARS BEFORE THE CHRISTIAN ERA. — INDIANS THAT HE FOUND THERE. — VOTAN'S HISTORY. — THE HOUSE OF DARKNESS.

It is with sentiments of the most lively satisfaction that we perceive of late years that authors of talent, scorning low novel writing, the reading of which is so pernicious to sensitive minds, have resuscitated a style of literature full of charm, interest, and novelty, by going to glean their scenes and subjects in the solitudes of the New World. We join with all our heart in this literary

movement, which is capable of drawing the attention of the civilised world on those poor savages, to whose well-being we had devoted our youth; this work contains the result of our personal observations, and of our ethnographical studies on the Indians of the GREAT DESERTS of North America: and we cherish the fond hope that it may be the means of guarding those who may consult it against the stumbling-blocks of fiction that would make them fall into historical or topographical errors, so very excusable, after all, when relating to such important questions and to regions almost unexplored.

The Indian nations afford a source of serious study to the observer, who, stripped of all prejudices against those simple men fallen from a better state, strives to discover the hidden motive of their conduct, their mode of living, and the secret that envelops their actions. The Indian, being of a really grave disposition, does nothing lightly. His traditions, his faith, his customs, his ornaments, have all a particular reason attached to them; they are far from being the whimsical conceptions of excited and ridiculous imaginations. Unfortunately he is but little known; he has ever been looked upon as the man of nature, or else as a wild beast that only resembles the human race by his exterior forms. For some he is a being only fit to figure in an eccentric romance; for others, an object of speculation, a mere medium whereby to obtain the valuable furs of the American deserts. And yet it is as useful as it is curious to analyse man fallen to the savage state, to examine how, without the help of civilisation, having no other resources than those of nature, he has been able to create laws, a penal code, divers industries, national institutions, and means of pros-

perity. The examination of the social condition of the Indians of North America is an important page in the history of humanity. The world has, in fact, an undeniable interest in knowing, and following in their results, the causes of the decline, or of the material and intellectual progress, of a people insulated in wildernesses by a succession of emigrations either voluntary, accidental, or forced, traversing whole centuries without being aided, in its physical or moral necessities, by the help of the civilised nations. The Indian theogony and mythology require also special attention, for science and philosophy can draw from them useful information, with regard to the origin and transformation of religious ideas and traditions.

The origin of those peoples is buried in profound darkness, which in our opinion will be removed by degrees as science advances in the paths of the historical discoveries in which man's genius causes him daily to make such great progress. Distinguished savants of all nations and of all ages have written on the subject of the Indian origins, with all the energy of a sincere conviction, based on positive facts, on precious documents, and on plausible reasoning; some make the Indians come from Phœnicia, others from Africa, others from Asia and from Iceland, finally, others believe them to be Autochthones.

The divergency of these opinions is occasioned by the generalising of the systems adopted at the present day, and founded on a semblance of homogeneity in Indian physiology. This homogeneity does exist, in a slight degree it is true, in faith and religious traditions, in customs and costumes; but it disappears as soon as we examine attentively and in particular the physiognomical types, the mode of existence, and the languages of the

different tribes. The similarity of religion and of usages among two peoples is not always accounted for by a parity of origin. We, nevertheless, agree with the American authors who reject the Autochthonical theory, basing such rejection on a certain likeness between the faith and religious rites of the Indians and those of the Persians, the Chaldeans, and the Hebrews, that this similitude of usages or of religions is deserving of serious reflection. Still, it is quite certain that two peoples, entirely and in all things different one from the other, can, when they find themselves in the same conditions and the same necessities, draw more closely together and resemble each other in manners, customs, usages, and even in religion. We can then draw the conclusion, that all the systems which have been invented to prove that the Indians have but one and the same origin are erroneous, because they only admit of a partial application, and do not include the generality of the race. Facts, on the contrary, demonstrate in a positive manner, that there is no community of origin between the Indians. Some authors, in studying the history, traditions, psychology, customs, arts, and agriculture of the Toltecs and the Aztecs, thought that the Red-Skins were a fraction of these two great civilised nations of Central America; but as this opinion only tends to increase the difficulty without solving it, we will not discuss it.

Our conviction respecting this grave subject is, that North America was peopled by the voluntary or accidental emigrations of Scythians, Hebrews, Tartars, Scandinavians, and Welsh; that those individuals or families, after having multiplied, met and united with each other, and that by the intermarriages of the divers races, the difference of the climates, the change in their mode of living, and

several other reasons of a similar nature, they lost their primitive character, and formed this heterogeneous combination of colours, habits, tastes, languages, and religions, which baffles science and the antiquary's researches. We will prove these varieties of origin by the simple indication of the historical, physiological, and religious documents, by the traditions, antiquities, and customs of this people, with whom we desire to make our readers intimately acquainted.

We must begin by speaking of the probable, the doubtful, and the known emigrations, which took place in America long before its discovery by Christopher Columbus. History, it is true, is rather silent with regard to the origin of the most ancient peoples of the world, and in particular about that of the American populations. It scarcely records anything but the events that have illustrated nations and drawn them from oblivion; but during that long interval of time which must have elapsed from the growth of a radical family into a people civilly constituted and strong enough to pierce through the obscurity of its existence by the extent of its power, a thick veil covers this cradle and this adolescence of the ancient peoples, which veil is only torn by fragments, and will, perhaps, never be completely removed.

It is generally admitted that the Phœnicians were the first who knew the art of expressing thought by writing, and that their manuscripts were destroyed either in the wars that brought on the downfall of the four great monarchies, or in the flames of the library of Alexandria; the consequent result of which is, that the most ancient book that has reached us are the books of Moses. Unfortunately the sacred writer only speaks of the Hebrews,

and of the nations that had more or less direct intercourse with them. Therefore, we must naturally conclude, that the silence of the Bible with regard to the other inhabitants of the globe leaves an enormous latitude to scientific researches, and to the hypotheses that may be made concerning the peoples whose origin is unknown to us. The Bible itself, such as it now is, after so many centuries of revolutions, of changes, and of slavery undergone by the Jews, presents so many deficiencies and obscurities on different subjects, that it requires the wise interpretation of the Church to prevent its becoming a cause of errors and of scandals; for which reason all Israelites who had not attained the age of thirty were forbidden to read it. These deficiencies of the Mosaic narrative can no more be replaced, than its obscurity can be made clear by the historical records that have escaped the destructive work of ages; we must then make up for the documents that are wanting by serious data, based on facts pertaining to natural history, to the traditions of the populations, and to their physical and moral organisation.

By studying the emigrations and the aptitudes of the peoples of the most remote antiquity, we can eventually understand the typical likeness that exists between the ancient and the modern ones, notwithstanding the considerable distances that separate the cradle of the first from the present residence of the latter. This typical analogy often throws light on the problem of races, which is so difficult to be solved when merely studied by itself, that is to say, solely in an anthropological point of view. The modifications undergone by the human family on account of the changes of climates, of civilisation, of manners, and mode of living, and through inter-

national intercourse, are quite numerous enough to cause a wide difference to exist between the descendants and their ancestors; consequently we think it necessary to say a few words about those intrepid and enterprising populations that many centuries before the Christian era overran the earth, to subjugate it to their laws, and to enrich themselves by commerce. These lines may, by deduction, shed a little light on ethnography, on the origin of American antiquities, and on the Indian theogony and languages. In this account our object is not so much to certify what we merely suspect, as to adumbrate a few personal ideas to which we have not had leisure to give their full importance, and which we trust a more patient and able hand will avail itself of to ripen and develop.

Although we do not know to what extent we can rely on the authenticity of the *Chronicles of Eolus*, written in a Scythian dialect (Phœnician, according to O'Connor), this manuscript is nevertheless deserving of mention, on account of the historical descriptions it contains, concerning part of the events that occurred during the 1304 years which preceded the establishing of the Scythian empire, and of which the Bible does not mention one word. Eolus, says the author of the *Chronicles of Eri*, was the chief of a Scythian tribe, and lived about forty years after Moses, that is to say, 1368 or 1335 years before Christ: he composed his book with the ancient traditions received in his tribe. According to this manuscript, the Scythians dwelt during one thousand years in the country where they were created (Asia). At the expiration of that time they emigrated towards the south, and having peopled the regions comprised between the *Sgeind* (the Indus), the *Ocean*, and the

Teth-gris (the Tigris), in 293 rings, or years, they crossed the *Teth-gris*, arrived at the *Affreidg-eis* (the Euphrates), occupied the *Tath-da-cal* (the Jews' Hiddekel), and spread beyond the *Affreidg-eis*, all over the earth, maintaining under their sway the several nations of the globe during the space of 1809 years.

Did this great emigration beyond the Euphrates extend to America? The Chronicles of Eolus do not say so; but it is to be remarked that there are *tumuli* and other American antiquities in the valley of the Mississippi, the origin of which, by careful examination, can be traced to that epoch.

When the 1809 years of which the historian speaks had elapsed, *Ard-fear* (Noah, according to O'Connor), son of *Am-lave* (Lamech), supreme chief of the Scythians in Western Asia, was attacked by *Eis-soir* and fled towards *Ard-mionn*. *Eis-soir* was a foreign people, called *Asshur* by the Hebrews, and *As-syrie* by the Romans; they were the Assyrians, who, under the guidance of Bel (the Jewish Nimrod), invaded Mesopotamia, defeated Noah, the Scythian chief, who took to flight with his companions, designated by the name of *Noe-maid-eis* (nomads), as far as Ardmionn (Armenia), where Bel founded the town of *Ba-bel*, in the plain of *Shinar*, and established the Assyrian empire on the ruins of the Scythian one, more than 2000 years before the Christian era. Prior to its downfall, the Scythian empire extended from the Indus to the confines of Arabia, of Egypt, and of Europe. The tribes that lived on the banks of the Indus were called *Indo-Scythians*, and those from the confines of Europe *Celto-Scythians*. The Chaldaic traditions, and the testimony of antiquity, argue in favour of the accuracy of the facts stated in the Chronicles of

Eolus, although their dates are more in accordance with the Samaritan text, than with that of the Vulgate. In corroboration of this, history informs us that Vexoris, king of Egypt, attacked Tanaüs, a Scythian chief; those two monarchs were struggling for the sovereignty of Asia; the Egyptians having been defeated in a battle, the Scythians retained the supremacy for upwards of 1500 years; it was then that the Assyrians, led on by Bel, invaded Mesopotamia, overthrew the Scythians, put an end to the tribute that the different peoples of Asia paid to them, and founded the city and the town of Babylon. Previous to the arrival of the Assyrians, there were scarcely any other peoples known but three great ones from the Indus unto the Nile and the Mediterranean, the Arabs, the Egyptians, and the Scythians. Although the latter had ceased to be the masters of Asia and of the known world, they still retained great power after their defeat, as may be seen in the tenth chapter of Genesis, where it is said that Japheth (or Jat-foth, who succeeded Noah), became the father of those tribes that divided the islands of nations between them; and their families were there the beginning of the peoples who had each their own language. (Gen. x. 5.)

We will not follow the Scythians in their different emigrations in Europe, in Asia, and in Africa, but we can observe that Solomon's vessels were not only constructed, but were even manœuvred by, the Phœnicians, one of the most enterprising Scythian tribes of Western Asia. Those vessels started frequently from Eloth and from Gezer, to go and trade with the maritime nations of the globe. The Phœnicians were already celebrated mariners more than 1000 years before Christ. They had colonised a portion of the British Islands 1037 years before the

Christian era, and had navigated on the ocean upwards of 500 years before the reign of Solomon; but, fearing to meet with competition in their commercial excursions, they carefully concealed their voyages from the other nations, and so closely was their secret kept, that Josephus upbraided the Grecian historians for their ignorance with regard to the Spaniards and Gauls, whom the Greeks believed to be the inhabitants of a town like Tyre or Sidon, and not of two large provinces. But if the Grecians did not know the Scythian colonies of Spain, of Gaul, and of the borders of the ocean, the same cannot be said of the Egyptians, who in the time of Sesostris invaded Spain, which they found inhabited by a population of herdsmen, governed by shepherd kings.

The commerce of the Sidonians arose to such a degree of importance that it excited the jealousy of their neighbours. When the Egyptians discovered that the earth did not end at the columns of Hercules, and when they had made themselves perfect masters of the nautical and astronomical sciences, after the emigration of the Edomites into Egypt, the Sidonian merchants feared that the Egyptians would take from them the monopoly of the maritime trade; they consequently did all they possibly could to prevent the world from knowing from what countries they drew their wealth, to attain which object it is even related that the master of a Phœnician ship ran her aground, on perceiving that he was watched and followed by a Grecian vessel.

From what precedes one cannot feel surprised to find Don Ramon Ordoñez proving, by Mexican hieroglyphical inscriptions, that the Phœnicians had intercourse with America. Don Francisco Nuñez de la Vega, bishop of Chiappas (Mexico), had become possessed of an im-

portant manuscript, which gave a minute description of the countries and nations visited by a traveller of the name of Votan. This document, written in the Tzendal, or in the Quiche language, was entirely copied by Don Ramon Ordoñez, shortly after the conquest of Mexico. Mariano Eduardo Rivero, and John James von Tschudi, authors of the Peruvian Antiquities, assert that the original was destroyed by fire on the public square of Huehuetan, in 1691. The title or frontispiece of this record consists of two squares of different colours, with their angles parallel to each other; one represents the Old Continent, designated by two characters having the form of an S, and placed perpendicularly; the other square represents the New Continent, and contains two similar characters, but placed horizontally. When Votan speaks of the Old World, the letter S stands upright in the chapter; and when he alludes to the New one, the chapter is marked by this same sign lying thus ∞. Between the two squares may be read the title or subject of the manuscript: "*Proof that I am a serpent.*" The author says in the text that he is the third bearing the name of Votan; that by birth he is a serpent, that is to say, a *chivim;* that he purposed travelling until he should find the road to heaven, there to seek out his relatives the serpents; that he went from *Valum-chivim* to *Valum-Votan*, and took with him seven families from the latter place; that in passing through Europe he beheld at Rome* a magnificent temple which was building there; that in looking for his other brothers, the serpents, he

* We believe there is here an error of the translator, and that instead of "Rome" it would be right to put "large town," for it is probable that Votan's visit took place before the foundation of Rome.

travelled along a wide road, on which he left traces of his passage, and that he at last saw the houses of thirteen serpents. In one of his journeys he met with seven families of the Tzequil nation, whom he recognised as being serpents; he then taught them everything that was necessary for their well-being, and they adopted him as a divinity, and chose him for their chief.*

The circumstances of Votan's first journey, such as Ordoñez had extracted them from the Tzendal historians, quoted by M. l'Abbé de Bourbourg, scarcely differ from those we have just related, and rather complete them; besides, they are so remarkable that we must quote them here: "Votan, it is stated, wrote on the origin of the Indians, and their transmigration to those countries. The principal argument of his work tends to prove that he descends from Imos, that he is of the race of Chan, the serpent, and derives his origin from Chivim. He was, he says, the first man that God sent to this region to people and divide the lands we call America. He makes known the route he followed, and adds, that after having founded his establishment, he made several voyages to Valum-chivim. He enumerates four of those voyages; in the first, he relates that, having started from Valum-Votan, he directed his course towards the 'Dwelling of the thirteen serpents.' From thence he went to Valum-chivim, from whence he passed over to the town where he saw the house of God that they were occupied in constructing. He then went to the ruins of the ancient edifice † that men had erected by order of their com-

* For more complete particulars, see Rivero's and Tschudi's Peruvian Antiquities.

† Nuñez de la Vega, in his Constituciones Diœcesanos, also mentions this tradition, and says, speaking of Votan, "Vio la pared grande," and

mon grandfather, thereby to reach heaven. He adds, that the men with whom he had conversed assured him, that this edifice was the spot from whence God had given to each family a special language. He affirms that, on his return from the house of God, he went a second time to examine the subterraneous places through which he had already passed, and the signs that were to be seen there. He states that he was made to traverse a road that went under the earth, and ended at the root of the heavens: with regard to this circumstance he adds, that this was no other than a serpent's hole into which he entered, because he was the son of a serpent." * Such are the principal subjects detailed in this most precious manuscript.

Cabrera, who has appropriated to himself a part of Ordoñez's work and researches, thinks that *Chivim* has the same signification as *Givim* or *Hivim*, that is to say, a descendant of Heth, son of Canaan. From the Givims or Hivites (Avims or Avites), of which Deuteronomy and the book of Joshua (xiii. 23) speak, descended Cadmus, and Hermione his wife, who, according to Ovid's Metamorphoses, were changed into serpents, and received divine honours. It is no doubt in allusion to this fable that, in the Phœnician language, the word *Givim* also signified a serpent. The town of Tripoli, under the dependency of Tyre, was formerly called *Chivim;* and Votan's expression, "*I am a serpent because I am a Chivim*," is quite easily translated by

adds, between parentheses ("que es la torre de Babel"). Ordoñez, who had a copy of Votan's history, says, "Vio con sus proprios ojos una pared muy larga."

* Son of a serpent, that is to say, of the family called *Chan*, or serpent.

these *words*: "*I am a Hivite from Tripoli*," which he calls *Valum-Votan*.*

Relying on ancient history, Cabrera believes that the Tyrian Herculeans, who, according to Diodorus, overran the globe, were some of Votan's ancestors; that the island Hispaniola is the ancient Septimania, and the town of Alecta that of Valum, from whence Votan began his journey. He also thinks that the thirteen serpents mentioned in the manuscript, are the thirteen Canary islands, whose name is derived from that of the inhabitants, the Canaanites, who stopped there, as did likewise the Hivites; and finally that the indications left by Votan on his passage, are the two white marble columns that were found at Tangiers, with this Phœnician inscription: "WE ARE THE SONS OF THOSE WHO FLED BEFORE THE ROBBER JOSHUA, THE SON OF NUN, AND WE FOUND HERE A SAFE ASYLUM." The seven Tzequil families that Votan met with were also Phœnicians, who belonged, in all probability, to the wrecked Phœnician vessel of which Diodorus speaks.†

According to the traditions collected by Nuñez de la Vega among the Tzendals‡, Votan would have primitively appeared in the state of Tabasco, accompanied by those whom Providence had destined to become, under His guidance, the founders of American civilisation. "Votan," it is said §, "was the first man that God sent to divide and portion out these American lands." Such division be-

* Ordoñez thinks that Valum-Votan is the island of Cuba.

† See the works already cited.

‡ Constituciones Diœcesanas del Obispado de Chiappas, &c., in Præamb. Roma, 1701.

§ Idem.

tokens either a conquest or a colonisation; but it is probably in both those lights that we should consider it, the division of the soil being one of the first conditions of property, and consequently of civilisation. It is then evident that Votan did not come with the idea of peopling the American continent.* The providential hand that had dispersed over the surface of the globe the races which issued from the children of Noah; the hand that had disseminated, with the seeds of the vegetable productions of the Indian Archipelago, the Malays in all the islands of the Pacific Ocean,—had provided, by analogous means, the primitive population of this inter-oceanic continent. It is not possible to state to what degree of barbarism that population had fallen previous to Votan's arrival. What seems to be certain is that, in a considerable portion of the countries extending between the Isthmus of Panama and the Californian territories, men lived in a condition similar to that of the savage tribes of the north. Natural caves, or huts rudely built with branches, sheltered their naked bodies, and their only garments were the skins of wild beasts killed in the chase. They lived on the fruits which the earth produced spontaneously, on the roots they tore up from the soil, and on the raw flesh of animals. †

It is nevertheless doubtful whether all the American tribes fell to this state of degradation. Remnants of

* As has been stated by some writers, who, not having been acquainted with Nuñez de la Vega's text, followed, rather inattentively, what Clavigero says, Hist. Antiq. de Mexico, trad. de Mora, tom. i. Dissertation sur l'Origine de la Population Americaine.

† Torquemada, Monarquia Indiana, lib. i. cap. 15, 20. Codex Chimalpopoca. Histoire chronologique des Rois de Culhuacan et Mexico; MS. en langue Nahuatl de la coll. de Botturini.

colossal magnitude, analogous to the Cyclopean edifices which are to be found in many parts of the Old World, are to be met with here and there in the Western Continent. No record, no tradition is to be had in the present day to indicate to what people those monuments owe their existence. Yet they can only be attributed to a warlike race, superior to the savage populations which are said to have been attracted to civilisation by Votan. May not that race have been contemporary with this legislator, by whom it had been conquered or driven back into the interior of the mountains? The difficulties in which Votan's history is enveloped, do not allow us to acquaint ourselves with this mysterious personage in a satisfactory manner. Nevertheless we cannot refuse to admit of the reality of his existence; but the double aspect under which tradition presents him to our view, leads us sometimes to suppose that there were many Votans *, or that this celebrated name was given as a title of glory to other men who came after him, and who were also worthy of public gratitude. Adored by several nations, under the title of Heart of the People †, or of Heart of the Kingdom ‡, Votan seems to us at times to have been a mythic creation, elevated above humanity, and in whom the primitive peoples, in their religious speculations, believed, as a necessary intermediary between man and the Divinity, and as a representative of his wisdom and power; at times also as a prince and a legislator, who came to wrest the savage tribes of America

* Ordoñez says so positively.

† Nuñez de la Vega, Constit. Diœces. Præamb.

‡ Burgoa, Descripcion Geogr. Hist. de la Provincia de Guaxaca, &c. part ii. cap. 72. Sahagun, Hist. de las Cosas de la Nueva España, &c. lib. iv. cap. 3.

from a state of barbarism, and to instruct them in law, religion, government, agriculture, and the arts.

The analogy that is to be found, in the Tzendal Quiché and Mexican traditions, between the personages presented under the different names of Votan, Cucumatz, Gukulcan and Quetzalcohuatl *, would lead us to believe that at the origin of history, one individual only united in his person this diversity of appellations. Nevertheless, a comparison of all those traditions decides us to admit of two of them, Votan and Quetzalcohuatl, the names of Cucumatz and of Cukulcan, having identically the same signification as the latter. It is, however, certain that it was from them, whether heroes, priests, legislators, or warriors, that Central America received the elements of that civilisation, which their successors have since brought to so high a degree. The knowledge of one God, creator and sole ruler of heaven and earth, appears to have been among the first dogmas that were instilled into the mind of the populations they had conquered †; but in the traditions that have been handed down to us, the legislator's name is often mixed up with that of the Divinity, and, under the symbolical veils in which primitive history is wrapped, he who caused the Americans to enter

* *Guc* or *Cuc*, in the Quiché language, is the same bird the Mexicans call *Quetzal*. *Cumatz* signifies snake, as also the Mexican word *Cohuatl*. In the Maya language of Yucatan we also find the same sense in the word *Cukulcan*: the whole three signifying a serpent covered with feathers; or, otherwise, a serpent ornamented with the feathers of the Quetzal.

† We say conquer, in the sense of the spiritual conquests that have since been made by Christianity; nevertheless, it is our opinion that persuasion alone did not suffice to make the people submit to Votan's laws, and that the force of arms must have been required to obtain that result.

upon a new life, in drawing them from the savage state, is on purpose identified with the Father of the universal creation.*

On his arrival in the New World, Votan, accompanied by the other chiefs of his race, advanced between the thousand islands of the lagune of Terminos. A multitude of birds with glittering plumage gave life to these waters, at that time rather shallow; and disturbed by the flotilla that bore the colony, they flew into the air, seeking a refuge beneath the shades of the surrounding forests. Wild beasts and all kinds of game were sporting about in the thick foliage and on the green sward that extended luxuriantly along the banks of the sea. In their joy at meeting with so great an abundance and with such fertility, the navigators cried out: "*U lunmil cutz, u lunmil geb!*"—It is the land of birds, it is the land of game. Those words remained long after as the generical name of all that country from Potonchon unto the low grounds of Chioppas. It is doubtless on account of their marshy character that they also got the name of Papuha, given by a Mexican author to the first countries that were inhabited on the continent by the foreign colonies, and which signifies, *in the muddy waters.*†

Votan then ascended the course of the Uzumacinta; and it is on the borders of one of the tributaries of this river that is placed the cradle of American civilisation. His sojourn there gave rise to a town, which had since the honour of becoming the metropolis of a great empire. It was situated at the foot of the Tumbala mountains; the name of Pachan that is attributed to it is less known than

* History of the Civilised Nations of Mexico and Central America, by M. l'Abbé Brasseur de Bourbourg.

† Ixtlilxochitl, Sumaria Relacion de la Historia Tulteca ap. Kingsborough.

that of Palenqué, whose majestic ruins revealed themselves scarcely a century ago to the gaze of the astonished traveller.*

The name of Na-chan, that is to be found in Ordoñez's work, signifies the town or habitation of the serpents. The Tzendals, amazed at seeing other strangers arriving in large barks and wearing long full garments, gave them the name of Tzequil, or "men dressed in women's clothes." Shortly after they had established themselves in the country, they formed alliances with the Tzendal maidens. Votan, enlightened and instructed by them with regard to the deity, and the government of men, succeeded in organising the administration of his states, and it is from this epoch that the foundation of the Palonquean empire may really be said to date.†

Ordoñez assures us that those events took place nearly one thousand years before the Christian era. M. l'Abbé Brasseur de Bourbourg, without affirming anything, nevertheless corroborates this date by the following quotation from the history of the suns in the Codex Chimalpopoca: "Here is the beginning of the history of the things that were verified a long time ago; that, viz. of the distribution of the earth, which is the property of all, its origin and its foundation, as likewise the manner in which the sun divided it; there are six times four hundred years, then a hundred, then thirteen more, this day 22nd of May, of the year 1558." By deducting the years that have elapsed, we obtain the year 955 before Christ, that is to say, less than a century after the colonisation of Ireland by the Scythians.

* See the Histoire des Nations Civilisées, &c., by M. l'Abbé Brasseur de Bourbourg.

† Idem.

We will finish the chapter relating to Votan, by observing that the traditions of which we have spoken make sufficient allusion to the origin of mysteries, analogous to those of Egypt and of Greece, numerous traces of which are to be found among the peoples of America. From thence came, no doubt, the trials by arms of the Mexican chivalry, which the Spaniards were so surprised to see, and which, after all, were probably but the remnants of the ancient initiation. It had prepared Votan to act the part of legislator and of prophet, which history has attributed to him. On his return to Palenqué, after one of his long journeys, he found his people divided. The Tzequils had taken advantage of his absence to usurp a portion of his authority, and to create for themselves a power in the very centre of his states. By his wisdom he speedily put an end to the disturbance, at the same time treating his adversaries with lenity. He divided the monarchy into four kingdoms, one of which was confided to the chiefs of the strangers; they had for their capital Tulhà, the ruins of which have been found close to Ococinco, on the other side of the Tumbala mountains. The rival of Palenqué, that town also attributed its foundation to the great legislator. A curious tradition, preserved even to this day among the Tzendales, says that a subterraneous passage of a prodigious length went through the mountain, establishing a communication between the temple of Tulhà and Palenqué, in the vale of Zuqui; it adds that Votan had this subterraneous passage hollowed out in memory of the one into which, during his journeys, he had been admitted, as the son of a serpent, to reach unto the root of heaven.*

* Ordoñez, Fragments manuscrits, &c.

These expressions appear to be equally applicable to the institution of the religious mysteries which Votan had established in that temple, hidden in the ravine, far away from the gaze of the profane. What strengthens this assertion are the words of the Bishop of Chiappas, relative to the sanctuary constructed, by the same legislator, on the banks of the Huehuetan river, which irrigates the smiling valleys of the Soconusco territory. Placed on an eminence at a short distance from the Pacific Ocean, it was destined, according to all probability, to initiate the princes and nobles of those countries into the mysteries of religion, and its vast subterraneous constructions caused it to be named the "House of Darkness." The tapir being considered a sacred animal, Votan brought it there, that it might multiply in the waters of the river; and he also deposited, in the gloomy retreats of this temple, the archives of the nation, committing them to the care of a college of old men, called Tlapiañes or guardians.* He instituted there, at the same time, priestesses, the head of whom had the singular privilege of commanding even the old men. It is for this reason that Messrs. Rovero and Tschudi said that Votan's manuscript was confided to the care of an Indian lady of rank, and to a certain number of Indians that was never to be exceeded. In the midst of the forest surrounding the House of Darkness, there soon arose a town that bore the name of Huehuetan, or the city of the old men, and of which nothing remains in the present day save shapeless ruins.

* Histoire des Nations Civilisées, &c., par M. l'Abbé Brasseur de Bourbourg.

CHAP. II.

GENERAL CONSIDERATIONS REGARDING THE FORMER PEOPLES OF AMERICA. — EMPIRE OF PERU. — HISTORY OF MANCO CAPAC AND MAMA OELLO HUECO. — FOUNDATION OF CUZCO. — EMIGRATION OF NOAH'S CHILDREN. — HISTORY OF THE FOUR BROTHERS AYAR-MANCO-TOPA, AYAR-CACHI-TOPA, AYAR-AUCA-TOPA, AND AYAR-UCHI-TOPA. — THE GIANTS OR QUINAMES. — THE FOUR AGES OF THE CREATION BY THE MEXICAN AUTHORS. — ARRIVAL OF THE OLMECS. — MASSACRE OF THE GIANTS. — ARRIVAL OF THE TOLTECS. — EMIGRATION OF THE FOUR BROTHERS BALAM QUITZE, BALAM AGAB, MAHNCUTAH, AND IGI BALAM. — DISPERSION OF THE ORIENTAL TRIBES OVER THE AMERICAN CONTINENT. — DESTRUCTION OF THE EMPIRE OF THE TOLTECS AND OF THAT OF THE VOTANITES.

By studying the ancient traditions, we shall be able to disperse, in some measure, the obscurity that surrounds the cradle of the tribes of the American deserts. We shall naturally be obliged at times to wend our way through thorny paths, with doubtful steps, for allegory and the marvellous are frequently met with on our road; still it is useful to become acquainted with those brilliant images under which the primitive peoples envelope the events stored up in their memory, because they throw more light on the singularity of the genius and manners of the Indians.

When the Spaniards discovered America they found there two perfectly constituted empires, whose origin, though wrapped in fable, deserves, nevertheless, to be briefly noticed. As the sciences are linked together by kindred ties, so there exist, in the history of the American tribes, whatsoever be their degree of civilisation,

certain connexions which indicate former intercourse between the populations of the south and those of the centre, between the populations of the centre and those of the north. True it is, those communications were of an unknown nature, but that they certainly existed will be seen by the *ensemble* of this work. From Peru to Mexico, and from Mexico to the Mississippi, there was an uninterrupted chain of Indian tribes, who associated with each other, or mutually waged war on one another. In speaking of the Natchez, we shall see that the tribes which were either enfeebled by combats, or obliged to flee from their neighbours, who were too powerful and too restless, carried off with them the recollection of their primitive constitutions, and preserved in the country of their adoption all the institutions that were not contrary to their new position; and it was only when their geographical situation, the resources, the climate of the country, and a thousand similar considerations, had entirely changed their mode of existence, that the traditions of their ancestors became gradually effaced in their memory, and their civil, political, and religious organisation taking a local colouring, was nigh completing the separation between the present and the past. Yet this separation is not as complete as it at first appears to be, for we shall see that in agriculture, in the political system of the Indians, or in their theogony, there still exist proofs of their intercourse with the civilized empires of Mexico and of Peru.

The natural tendency of man to believe all that appears wonderful, his ignorance with regard to acting causes, the impositions of the Pagan priests, and particularly the individual patriotism or the collective pride of races, led the majority of the people to believe themselves under

the special protection of Heaven, for they fancied their chieftains to be of divine origin. For instance, the Peruvians imagined that the sun, their tutelar divinity, had sent its children, Manco Capac and Mama-Oello-Hueco, to reform them. Previous to the arrival of the Incas, emperors of Peru, and sons of the sun, like the Emperor of China, Peru was divided into several nations, either independent, wandering, or fixed, whose restless character and warlike humour caused them to be continually at variance with one another. Totally ignorant of husbandry, and of industry, knowing no moral law nor social tie, roaming like the animals of the forest, and like them subject to all the inclemency of the seasons, having no one to teach them the means of ameliorating their condition, such was the state of the Peruvians when the sun sent forth two of its children, on the lake Titicaca, telling them "that they may go wherever they wished, and giving them an ingot of gold, which he ordered them to place on the ground, and bade them stop when this ingot should sink into the earth." When they had reached the summit of the Huanancauri, in the valley of Cuzco, the ingot sunk into the soil with such facility that it disappeared in a moment. Then the son of the sun said unto his sister, who was at the same time his wife, It is in this valley that our father wishes us to dwell. We must try and draw the people to us, and accomplish all the good that our father hath commanded.* From the summit of the Huanancauri Manco Capac directed his steps towards the north, and his sister, Mama-Oello-Hueco, went towards the south; they harangued the multitudes, exhorting them to unite in changing their evil ways, and to receive as a gift from Heaven the counsels and instructions that they would

* Gascilasso de la Vega.

condescend to give them by order of their father the sun. Fascinated by their appearance, and the respect which those two extraordinary beings knew how to inspire, the wandering tribes followed them to the valley of Cuzco, and dug the foundation of a town. Cuzco was then the central point around which radiated the Indian populations, so that it became the cradle of civilisation in the empire founded by the celestial couple, Manco Capac and Mama-Oello-Hueco.

These two children of the sun established a social union between the different tribes of Peru, they organised their forces, and gave a new and lofty turn to their ideas. Manco Capac instructed the men in agriculture, industry, and the arts; he also gave them laws, and a most perfect political system; Mama-Oello-Hueco taught the women the art of spinning, weaving and dyeing, as likewise the domestic virtues of grace, chastity, and conjugal fidelity.

This allegory concerning the arrival *on a lake* of this mysterious couple, with the object of civilising the Peruvians, recalls to our mind the Chactas's and Chickanas's tradition (which we will hereafter mention), with regard to their emigrations towards the south-east of North America. In fact there is scarcely one of the Indian tribes who have preserved traditions of its origin, its civilisation or primitive well-being, that has not the idea of some kind of emigration.

The manuscript left by Montesinos, which is to be found at Seville, in the convent of San José, of the order of Mary, begins the history of the Peruvian origins at a much earlier period than Gascilasso de la Vega. Montesinos was a native of Ossuno, in Spain; he had been twice *Visitador* of Peru, and travelled all over the latter country during his sojourn of fifteen years there: he

visited Peru one century after it had been discovered, and gave himself entirely up to historical researches relating to the former empire of the Incas, taking note of all the traditions and songs of the Indians, uniting everything he heard said concerning past events, profiting by the unpublished manuscripts compiled under the direction of F. Luis Lopez, bishop of Quito, studying antiquities with such zeal that none of his contemporaries equalled him in archæological science.* Montesinos endeavours to prove that it was at Peru that Solomon's fleets embarked all their riches. But his opinions are so singular, and so eccentric, that they deserve to be placed amongst the strangest views to which the origin of the American populations has given rise.

"Men," says the author, "had become so numerous that Armenia was not large enough to contain them, and the command which God had given Noah to people the world obliged his descendants to separate; each family then went and settled down in the country that best suited it. It was even said that Noah himself went round the world to assign to each the place where he was to take up his abode."

Ophir, one of that patriarch's descendants, fearing lest the division of land would give rise to quarrels, retired with his family unto the most distant countries. . . . He went to Peru, where he established himself and those who had gone with him. The number of the inhabitants rapidly increased, but they always looked upon Ophir as their chief, and the latter took care to instil into the minds of his descendants the knowledge of the true God,

* In 1846 M. Ternaux Compans published, in his American Library, the Memoirs of Montesinos, and it was in that Library that we had to seek out the documents we required.

and of the natural law; lessons which were preserved by tradition among their children. They lived in peace for about one hundred and sixty years, having always the fear of the Lord before their eyes; but subsequently, disputes arose about the possession of springs or of pasturages; each tribe then chose a chieftain to lead it to battle, and those commanders availed themselves of the opportunity to extend their authority.

Five hundred years after the deluge, according to historical songs and ancient traditions, all this region was filled with inhabitants. Some came from Chili, others from the Andes, from *Firm Ground*, or from the south sea, so that all the coast was peopled from the Cape of St. Helena to Chili. The first who penetrated into the country came in great numbers from the direction of Cuzco. The Amantas' account says, that they were led by four brothers, called Ayar-Manco-Topa, Ayar-Cachi-Topa, Ayar-Anca-Topa, and Ayar-Uchu Topa, who were accompanied by their sisters, that were at the same time their wives, and whose names were Mama-Cora, Mama-Huacum, Hipa-Huacum, and Pilca-Huacum.*

The eldest of the four brothers ascended to the summit of the Huanancauri mountain, and taking hold of the sling that was tied round his head, cast a stone towards the four cardinal points, declaring at the same time that by so doing he intended to take possession of the country for his brethren and himself. The three other brothers were not satisfied with this arrangement, and thought that their elder brother had acted thus to acquire supremacy over them. The youngest, who according to tradition was at the same time the most skil-

* See the History of Peru, by Balboa.

ful, resolved that no one should contend with him for the supreme authority. To effect his purpose, he shut his eldest brother up in a cave, the second was thrown into a hole, and the third fled to a distant province.

The fratricide consoled the wives of his three brothers in the best way he could: he announced to them that he wished to found a town, and to be the lord of its inhabitants, which was the real motive that prompted his conduct, and that henceforth every one should obey and respect him as being the only son of the sun. The eldest sister approved of this design, and as there were in that place heaps of stones which the Indians called *Coscos* or *Cuzcos*, she advised him to make use of them to build his town with. Some writers even assert that it was from thence it derived the name of Cuzco; others say, that the spot on which the town was built, being at that time covered with rocks, which it was necessary to flatten; and as "flatten" is translated into the Indian tongue by the word *Cuzco*, or *Cosca*, they thought that it was the etymology of the name of Cuzco.

Ayar-Uchu-Topa, also called *Pirhua*, or *Puhua Manco*, thereupon assembled all his relatives, who had become very numerous, and ordered them to level the ground, to fetch stones, to construct houses, and to found a town. When any dissension arose between the vassals, on account of the arable lands, the springs, or the flocks, he caused the malcontents to appear before him, and then charged his eldest son, whom he cherished more than the others, to decide the case, and make the contending parties agree. The father and son made themselves so much respected, owing to the wise counsels they gave, that the least word they uttered was considered as an inviolable law, which should be obeyed without a mur-

mur. Ayar-Uchu-Topa was looked upon as the real son of the sun, even by the neighbouring tribes, who, imitating his example, constructed many towns around Cuzco.

That prince adored the true God under the name of Illatici Huiracocha; he lived above one hundred years, and reigned sixty; when he died, he was succeeded by his son, Manco-Capac.

Such was the origin of the Peruvian monarchy, according to the Indians' traditions. We shall find in the primitive history of Central America and of Mexico, as likewise in that of Peru, strange traditions, which agree with the accounts given by the savages of North America (which for the most part are allegorical), and which we insert here to show the analogy that exists between them.

When the first pioneers of civilisation appeared on the shores of the American peninsula, indigenous populations already occupied the greater portion of the interior regions. It is not possible to say to what nation they belonged, but there is reason to believe, says M. l'Abbé de Bourbourg, that they were of various origins, and that they differed greatly from one another in their customs, their habits, and particularly in their social state. The Quinamés, or giants, that powerful and haughty race, to whom all the traditions refer, must have been numerically the least considerable, but superior to the others in strength, intelligence, wealth, the handling of arms, and the advanced condition of the society it had founded. History states that this race was in possession of the interior provinces of Mexico, of Guatemala, of the plateau Aztec, and the neighbouring countries of Tabasco, but it says nothing of the origin nor the government of

the Quinamés, though at the epoch of the conquest of Yutacan by the Spaniards, a great number of well-informed Indians alleged that they had learned traditionally from their ancestors that their country had been peopled by nations coming from the east, whom God had delivered from others by opening to them *a road across the sea.** Should we consider those giants and that route by sea an allegory, or a tradition of the giants of the Bible, and the Hebrews' passage through the Red Sea? It is rather difficult to decide this point; nevertheless it is a curious fact, that in the Indian reminiscences of North America, the recollection of mischievous giants, or monstrous animals, that devastated their country, is still quite fresh.

The Toltecs' history is the first in the order of the American annals, the bases of which are admitted by the writers, who tried to throw light on the obscure beginnings of the Mexican civilisation. The historians that existed before the conquest, such as Netzahualcoytzin, Xuihcozatzin, son of king Huitzilihnitzin, and many others, assert that the God, Toltec Nahnac-Hachiguale-Ipalnemoani-Ilhuacahua-Halticpac, that is to say, the Universal God, Creator of all things, whom all creatures obey, Lord of heaven and earth, having formed all visible things, created man's first parents, from whom all men descend, and gave them the earth for their dwelling. According to those historians, the world had four ages. The first commenced at the creation, and was named in an allegorical sense *Sun of the waters*, because it ended by a universal deluge, in which men and creatures perished. The second age was called *Sun of the earth*, for in many places the soil opened,

* Herrera, Historia Gen. de las Indias Occid.

the mountains crumbled, and crushed in their fall the greater part of the men that had escaped from the deluge. The giants of whom we have spoken are said to have lived at this period. The third age was named the *Sun of the air*, because a terrific wind arose, which threw down the trees, the edifices, and even the rocks. The men who survived this disaster, having perceived a great number of monkeys that in all probability were driven by the wind from another country, thought that the other men had been changed into those animals. It was during that epoch that the Ulmecs, or Olmècs, arrived in vessels from the east, and landed in the bay of Vera Cruz, which they found peopled with giants. It is to them that, in all likelihood, should be attributed the erection of those congeries of rough stones of prodigious size, irregularly placed one above another, without cement, so as to form perfect cyclopean walls, which are to be found extending from Mexico to the Peruvian frontiers, and which are very like the *Noraghe* of Sardinia.

The Quinamés, or giants, evidently alarmed at the rapidity with which their new neighbours prospered in their colony, subjected them to the hardest yoke; but this state of bondage was only of short duration, for if the giants had material power on their side, the Olmècs possessed more courage, cunning, and superior genius. To get rid of their oppressors, they invited the principal chiefs of the Quinamés to a banquet, where they soon intoxicated them, and then massacred them to the last man. Such was the origin of the Olmècs' domination over the table land of Huitzilapan. The Quinamés race was almost annihilated, for there only remained a few remnants of it scattered over the mountains, which were

also destroyed by the Olmècs a few centuries later.* At a period posterior to the destruction of the Quinamean empire, the legislator, Zamna, landed at Yucatan, and there acted a part quite similar to that which Votan had filled in Guatemala, after the foundation of Palenqué, or Xibalba. He is also looked upon as the founder of the Mexican knighthood, and it is over his grave that the celebrated city of Itzmal-ul has arisen.

After the enfranchisement of the Olmècs, a man named Quetzacoatl arrived in the country, whom Garcia, Torquemada, Sahagun, and other Spanish writers, took to be St. Thomas. It was also at that time that the third age ended, and that the fourth begun, called *Sun of fire*, because it was supposed that it was in this last age that the world would be destroyed by fire.

It is in this fourth period that the Mexican historian places the Toltecs' arrival in New Spain, that is to say, about the third century before the Christian era. According to the Quichés' traditions, the primitive portion of the Nahoas, or ancestors of the Toltecs, were in a distant East, beyond *immense seas and lands.* "It was there that they multiplied in a considerable manner, and lived without civilisation. At that time they had not yet contracted the habit of leaving the place of their birth; they payed no tribute, and all spoke the same language. They burned neither stone nor wood; but contented themselves with lifting up their eyes to heaven, and trying to observe the Creator's laws." Amongst the families and tribes that bore with least patience this long repose and immobility, those of Canub† and of Ilocab

* Ixtlilxochitl, Historia de los Reyes de Tezcuco.

† The former plural for *Tan* or *Dan*, the name of a place.

may be cited, for they were the first who determined to leave their country. The Nahoas sailed in seven barks or ships, which Sahagun calls Chicomoztoc, or the seven grottos. It is a fact worthy of note, that in all ages the number seven was a sacred number among the American people, from one pole to the other. It was at Panuco, near Tampico, that those strangers disembarked; they established themselves at Paxil, with the Votanites' consent, and their state took the name of Huéhue-Tlopallan. It is not stated from whence they came, but merely that they came out of the regions where the sun rises. The supreme command was in the hands of a chieftain whom history calls Quetzalcohuatl, that is to say, Lord *par excellence*. To his care was confided the holy *envelope*, which concealed the divinity from the human gaze, and he alone received from it the necessary instructions to guide his people's march. These kinds of divinities, thus enveloped, passed for being sure talismans, and were looked upon with the greatest respect and veneration. They consisted generally of a bit of wood, in which was inserted a little idol of green stone; this was covered with the skin of a serpent or of a tiger, after which it was rolled in numerous little bands of stuff, wherein it would remain wrapped for centuries together. Such is, perhaps, the origin of the *medicine bags* made use of, even in the present day, by the Indians of the great deserts, and of which we shall speak in the second volume of this work.

The Quichés' traditions are more explicit with regard to this first emigration, which they appropriate to themselves, by endeavouring to prove their origin to be the same as that of the Toltecs', from whom they derived their civilisation and their laws. Like the Peruvians, they

had four brothers, called Balam-Quitze, or *the sweet smiling tiger;* Balam-Agab, *the night tiger;* Mahuentah, a name which bears a resemblance to that of the savage chieftains of the North, and which signifies the *tiger of the moon;* and Igi-Balam, who with his brothers formed the Quitchés' first legislators. These four symbolical names invariably appear at the head of all the tribes of Central America, from the remotest period until their definitive establishment in the Quiché mountains. When they were about to emigrate, one tribe alone listened to their advice, and left with them, but soon afterwards others followed their example; an irresistible power seeming to draw them on to each other's lands. Unhappily those first peregrinations are, like the preceding ones, enveloped in profound mystery. There is here another hiatus in history, that includes a lapse of time, the length of which it would be impossible to calculate, for it has but these simple words to fill it up: "And the places where Balam-Quitze, Balam-Agab, Mahuentah, and Igi-Balam, with the houses of Tanub and of Ilocab went to, were called Tulan, Zuywa, Wucub-Pek,* (*the Seven Grottos*), Wucub-Ciwan (*the Seven Ravines*); such is the name of the spot where they received gods." . . . And when they reached Tulan, Zuywa, Wucub-Pek, Wucub-Ciwan, they had, according to ancient traditions, taken a great journey to arrive there.

It is difficult to say where Tulan is to be found, that mysterious land, which has remained engraved in the memory of all the nations of North America; that cradle of science and wisdom where those same nations imbibed, with the elements of a polished life, the art of governing

* Being the same thing as the Mexicans' Chicomoztoc or Cicomoztoc.

themselves, and received with the symbols of their religion, the organisation of their worship. "Four persons," says the Cakchiquel manuscript, "went out of Tulan on the side where the sun rises, and a Tulan is there to be found; there is another in Xibalba *; another exists also where the sun sets, and it is thence we are come †; and in the places where the sun sets there is again another, where God dwells. Therefore, there are four Tulans; it was from the places where the sun sets that we came to Tulan, from the other side of the sea, and it was at this Tulan that we were begotten by our fathers and mothers."

This passage proves that there was a region called Tulan, in the east, situated on the other side of the sea; but in what part of the world should it be placed? This question has not yet been solved. It was this region that became for the emigrants a second cradle after their long peregrination on leaving their primitive country. It was from thence that the subsequent emigrants directed their steps at different intervals towards North America. At Tulan also took place the discovery of their gods, the first of whom was Tohil, that is to say, the sun; it was likewise at Tulan that they acquired science and wisdom in so prompt a manner. This passage, taken in a figurative sense, signifies that in this town they discovered the lights of religion and of civilisation.

The Cakchiquel manuscript refers to a war in Tulan-Zuywa, at the end of which the tribes were obliged to

* Doubtless the Tulan of Ococingo, situated at two days' journey from Palenque.

† Apparently the one of the Valley of Anahuac, forty miles from Mexico; or the one that has been recently discovered in Upper California.

quit their new country. "Let us fly, my children," said the fathers and mothers, "you are slaves, you bear the burden of all the labours and hardships." Then addressing the chiefs of the lances they added, "You will behold with us other mountains and other valleys. Beyond the other side of the sea you have another country, oh my children! and there you can hold up your heads." Thus did they speak to the thirteen divisions of the seven towns, to the thirteen divisions of warriors." So they tore themselves from thence and abandoned the east. Tyranny and the wish to shake off an insupportable yoke were the motives for their leaving the oriental Tulan.

It is not known what route those tribes took at their departure, nor the period of their voyage, but they do not seem to have remained long united in their march. Fatigue, the roughness of the road, and privations of all kinds, often obliged them to separate. They arrived one after another at the sea-shore, where they appear to have still roamed about for a considerable time in doubt and uncertainty.*

Their crossing the sea is very obscure; one would say that they had found a line of rocks or icebergs, which facilitated their passage. The joy they might have felt at seeing land could not long hold out against the misery and hardships which awaited them on that new soil, for they were perished with cold, and in utter darkness, deprived of food, without knowing whither to direct their steps. The strange pages of this manuscript frequently speak of the great obscurity and the continual night in which they remained, not only during the passage, but for some time after they had seen the coast. Should we draw the conclusion, that having left Tulan

* Histoire des Nations civilisées.

at the approach of winter they directed their course towards the northern latitudes, from whence they would have landed in America before the sun had returned.

After long expectation, mingled with anguish and hope, they at last beheld the morning star; whereupon they immediately uncovered the incense which had been brought from the East. That brought by Balam-Quitzé was called the incense of Mixtan; Balam-Agab's was named the incense of Cawitzan; and the one brought by Mahucutah was considered the divine incense. Now these three alone had incense, which they burnt while they advanced towards the East, and they wept for joy, dancing and burning their precious incense. It is surprising that the text does not speak of Igi-Balam. Besides, does not this incense brought from Mextan and Cawitzan put one in mind of some of the Persian provinces? and is it not likely that the divine incense came from Arabia? And, again, do not those three personages, this incense and that star, seem to bear testimony of a vague tradition of the Jews and Christians with regard to the Magi kings? Shortly after the tribes separated, for the misery which in those days resulted from the reunion of a great number of families in one point, beneath an austere climate, forced them to disperse. At that time their sole raiment was made of animals' hides, for they had not yet discovered the means to clothe themselves in good stuffs. Their simple and hard life was in some measure similar to that of the actual savages of America. After this separation many nations began to be founded, and the tribes were scattered over the American continent, thus forming different societies.

When the Nahoas had recognised the land they had

been seeking, they still continued their navigation along the coast into Guatemala. Las Casas, referring to this subject, says, that in this part of Yucatan they had retained the recollection of twenty illustrious chiefs who, coming from the east, had landed there many centuries before. They were habited in long full garments, and wore long beards. Their power having soon become very formidable in their state of Huéhue-Ilopallan, they had frequent contests with the Votanites; the king of Palenqué perished in a combat, and his empire became tributary to the Nahoas. After some time of subjection the inhabitants of Palenqué rose against their conquerors, and compelled the Nahoas to quit their country. A portion of the fugitives fell upon Yucatan, and put an end to the Zamna dynasty; the others emigrated to the shores of the Pacific Ocean. At a later period they ascended towards the north-west, and founded several kingdoms in the neighbouring regions of California. Téotihuacan was one of the most important of these kingdoms; it was there that the first human sacrifices took place about two centuries before the Christian era. The priests of Téotihuacan being continually molested by the incursions of wandering tribes belonging to the neighbourhood, took into their pay the savage tribe of the Mixcohuas. However, they soon had to repent their imprudence, and were obliged to call in other savages, who, like the Mixcohuas, were of Nahualt origin, to help them against their own soldiers. These tribes spread themselves from Téotihuacan over all Mexico. Their invasion lasted from the second to the sixth century of our era. Mexcohuatl was their most celebrated warrior; it was he that invaded all the table land of the Amahuac, and there founded an empire that lasted above four centuries. The only town

that offered him resistance was Cuitlahuak; it was even withheld from his valour, owing to the swamps by which it is surrounded and rendered impregnable. After besieging this stronghold for a considerable length of time, he was obliged to withdraw. His long sojourn in the midst of rushes, which grow in abundance round the town, caused his soldiers to be nicknamed *Toltècs*, that is to say, those who live amid rushes.

It was shortly after all those revolutions that the empire of the Toltècs became highly flourishing under the reign of Ceocatl Quetzalcohuatl, a Culhuacan prince, who preached a new religion, sanctioning auricular confession and the celibacy of the priests. He proscribed all kinds of warfare and human sacrifices. Tetzatlipoca put himself at the head of the dissatisfied party, and besieged Tollan, the residence of Ceocatl Quetzalcohuatl; but the latter refused to defend himself, in order to avoid the effusion of blood, which was prohibited by the laws of the religion he himself had established, and retired to Cholula, that had been constructed by his followers. From thence he went to Yucatan. Tetzatlipoca, his fortunate rival, after a long reign became in his turn the victim of the popular discontent, and fell in a battle that was given him by Ceocatl Quetzalcohuatl's relatives. Those two kings are elevated to the rank of gods, and their worship was a perpetual subject of discord and civil war in all Amahuac until the arrival of the Spaniards in the New World.

At the beginning of the eleventh century the Toltècs' nation, exhausted by long years of famine and pestilence, by rebellions, and also by the fierce war which was kept up between the followers of Quetzalcohuatl and of Tetzatlipoca, sunk beneath the blow of a new invasion

made by the Nahoas, who came from the north; the most numerous among them were the Aztecs, the Tepanecs, and the Chichimecs. It was about the same epoch that the empire of the Votanites, equally enfeebled from divers intestine wars, seems to have wasted away in Guatemala. Towards the middle of the eleventh century the southern regions were invaded by divers tribes of Toltecean origin, such as the Nahuatles, the Quichés, and the Cakchiquels. From that time till the arrival of the Spaniards, all those countries were successively ravaged by continual revolutions, which greatly facilitated the conquest and domination of the new victors.

CHAP. III.

AMERICA KNOWN BEFORE CHRISTOPHER COLUMBUS. — DIALOGUE BETWEEN MIDAS AND SILENUS.— HANNO.—THE TESTIMONY OF DIODORUS OF SICILY. —PLATO'S ATLANTIC.—CITATION FROM SENECA.—DISCOVERIES MADE BY THE CARTHAGINIANS.—JEWISH EMIGRATIONS.—ANALOGIES BETWEEN THE INDIANS AND THE HEBREWS.—THE CANAANITES.—ASIATIC EMIGRATIONS. — INDIAN, MEXICAN, AND PERUVIAN TRIMUTI.—IRISH EMIGRATIONS.— ICELAND. — NADDOD. — SCANDINAVIAN EMIGRATIONS. — FINLAND DISCOVERED BY LEIF.—HUITRAMANNALAND.—THE NATIVES' TRADITIONS.— HISTORY OF BIOERN.—END OF THE SCANDINAVIAN-AMERICAN COLONIES.

We have treated at considerable length on all that relates to the ancient history of the people of America, so as to prove that numerous emigrations took place, from the farthest points of our hemisphere at very remote periods, although a thick veil envelops the origin, the date and the nature of those emigrations, which were anterior to the historical epoch. As we advance towards the dawn of modern times, this veil becomes more transparent, and is at last completely rent in the ninth century. In continuing the narrative of those great movements of families or tribes, we shall easily succeed in proving our assertion that the population of the New World, such as it was at the time of the conquest, did not proceed from one stock only, but from the contingent of many nations, coming from Europe, from Asia, and from Africa. In consequence of the absence of documents that would enable us

to link the primitive history of America with that of the Old World, we should not reject the different systems adopted by distinguished writers with a view of giving the Indians a common origin. So far from it, we on the contrary consider each of these systems as the link of a chain broken by time; but by dint of labour, researches, and combinations, we shall finish by reuniting all those links, by becoming evidently acquainted with the events that occurred previous to the foundation of the great Mexican and Peruvian empires, and may thereby gradually succeed in filling up the deficiency which exists in the history of the human race, and which separates the two continents by a still deeper abyss than that of the ocean.

There is now no doubt of the fact that America was not only supposed to exist, but was actually known before Christopher Columbus, and even from the most remote antiquity. Theopompus, a learned historian and celebrated orator, who lived in the days of Alexander the Great, relates, in his book entitled *Thaumasia*, a dialogue that took place between Midas, the Phrygian, and Silenus. This book was lost, but Strabo speaks of it; and Alianus, who lived about the year 200 of the Christian era, gives part of the dialogue, of which the following is the substance.* After a long conversation, Silenus said to Midas that Europe, Asia, and Africa are only islands surrounded by seas, but that there was a continent beyond those seas, the dimensions of which were immense, even without limit, and so fertile was it that animals of prodigious size were to be seen there, as likewise men whose stature was double that of ordinary men, and who attained an extreme old age. He added that a great

* Ælian, Variar. Historiar. lib. iii. chap. 8.

many large towns were to be found in that continent, one of which contained above a million of inhabitants, having different laws and customs from those of the people of Asia, Africa, and Europe; and finally, that gold and silver were very common on all the surface of that vast country.

Hanno, who lived before the foundation of Rome, perhaps eight hundred years before Christ, made a voyage beyond the Pillars of Hercules, visited the African coast, and traversed the ocean thirty days, keeping due west. This intrepid officer wrote an account of his voyages, in a book entitled *Periplus*, which was printed in Greek in 1533: we have not been able to obtain this book, but the authors who cite it draw the conclusion that Hanno must have visited America or some of the West India islands. Diodorus of Sicily affirms that some Phenicians were cast on the shores of an exceedingly fertile island, situated opposite Africa. "With regard to this fact," says he, "the Phenicians keep the most profound silence, fearing that the neighbouring nations would reap all the benefit from this discovery, which they wished to keep entirely for themselves. Homer and Horace also speak of islands situated to the west of Europe and Africa. They were called Atlantides, and supposed to be at a distance of ten thousand stadia from Africa. It is there that the poet places the Elysian Fields. By these citations one might be inclined to think, and with some reason, that there formerly existed a great number of islands in the Atlantic Ocean which subsequently disappeared; but Diodorus of Sicily is still more explicit, and gives us clearly to understand that he speaks of a real continent, for he adds: "After having left the islands situated beyond the Pillars of Hercules, we shall speak of those

that are much farther off in the Ocean. To the west of Africa, and many days' sail from it, a far way from Libya, there is an immense island in the midst of the sea. Its shores are indented by countless navigable rivers, its fields are well cultivated and dotted with delicious gardens, and with plants and trees of all sorts." Finally, he describes it as being the most beautiful country known, with inhabitants who live in spacious dwellings, amid every kind of abundance; in short, the recital made by Diodorus corresponds exactly with that of the first Spaniards who landed at Mexico.

Plato's testimony, given 400 years before the Christian era, has perhaps still more weight, and deserves quotation. "In those first days (of its discovery) the Atlantic was a very wide island, wherein dwelt mighty kings, who united their forces to conquer Asia and Europe, the result of which was a disastrous war, in which the Athenians joined*, with the consent of the Greeks, and were victorious; but the Atlantic island was suddenly destroyed by a deluge and an earthquake, and that warlike people thus perished in the floods." He also says in another place, "There existed an island at the mouth of the sea beyond the straits, called the Pillars of Hercules; this island was larger and wider than Libya and Asia, from thence there was an easy passage unto the other islands, and from the latter unto the continent beyond those regions. Neptune settled in this great island; he named it Atlantic, after his son, Atlas, and divided it among his ten sons. The portion that befel the youngest was the extremity, called *Gadir*, which signifies *fertile*, or *abounding in sheep*. Neptune's de-

* Doubtless their ancestors.

scendants reigned in that place from father to son, according to the order of primogeniture during many generations."

Although this narrative be mingled with fables, we should not reject it altogether, for it proves to us that the ancients had really knowledge of vast continents situated to the west of Europe and Africa.

Seneca thus finishes the second act of Medea:

> "In some few centuries the ocean will unloose
> The chains of nature, offering to man's gaze
> *Vast continents* surrounded by the seas;
> Another Thetis* that *New World* shall find.
> No more shall Thule be earth's utmost bounds."

Aristotle, or the author who has written the book attributed to him, also speaks of an island placed beyond the Straits of Gibraltar, and the most striking feature is, that he does not affirm what he states, but alludes to it as a general rumour, an accredited opinion among his contemporaries. Here is the passage:—"It is said that the Carthaginians have discovered beyond the Pillars of Hercules a very fertile island, but which is without inhabitants, yet full of forests, of navigable rivers, and abounding in fruit. It is situated many days' voyage from the main land. Some of the Carthaginians, charmed with the fertility of that country, conceived the idea of getting married, and of then going and establishing themselves there; but it is said that the Carthaginian government forbids any one to attempt to colonise the island under penalty of death, for in case it were to become powerful, it might deprive the mother country of her

* Some editions have *Typhis* instead of *Téthis*, which has almost the same meaning, Typhis being the pilot of the Argonauts.

possessions there." In a passage of Plutarch, quoted by M. de Humboldt *, mention is made in perfectly clear and precise terms of a great transatlantic continent, and of a mysterious stranger who came from that distant country to Carthage, where he lived for many years, two or three centuries before the Christian era. According to Cabrera, the first Carthaginian emigration to America took place during the first Punic war. We shall not speak about the kingdom of Amahnamecan, which the same author mentions as having been founded in the New World by the Carthaginians, for that subject would lead us too far.

M. l'Abbé de Bourbourg in his work on the Civilised Nations of Mexico and Central America, says, that crowds of foreigners, Frenchmen, Belgians, Germans, and Englishmen, were as much surprised as himself to find in certain Guatemalian villages the Arabian costume of the men, and the Jewish one of the women of Palin, and of the borders of the Lake Amatillan, as perfect and as gorgeous as those in Horace Vernet's paintings. This statement induces us to say a few words relative to the origin of the American races attributed to the old kingdom of Israel, that is to say, to the tribes conquered by Salmaneser, and led captive from Samaria, whilst the tribes of Judah, of Benjamin, and half that of Manasseh still remained in the kingdom of Judea and in the towns situated on the opposite banks of the Jordan.

The learned Rabbin, Manasses Ben Israel, wrote a celebrated work entitled "The Hope of Israel," (published at Amsterdam in the year 1650.) He was the first writer

* Humboldt, Examen Critique de la Géographie du Nouveau Continent, tom. i. p. 191, Paris.

who treated on the subject of the Jewish emigrations, at the request of Montesini, who, having travelled in South America, recognised his Indian guide to be an Israelite. The latter assured Montesini that considerable numbers of Indians of Jewish origin lived amid the Cordilleras. Although the historical events cited by Manasses Ben Israel be less numerous than those of his successors in the same field, yet the proofs he puts forward are very plausible. Gregorio Garcia, in his interesting history on the origin of the Indians, alludes to an ancient Spanish tradition, which gives as certain that the natives of America sprang from the tribes of Israel that were led away captive by Salmaneser, king of Assyria. Omitting the more or less ingenious theories and proofs given by Heckewelder, Beltrami, De Laet *, Emmanuel de Moraez, Beatty, William Penn, Count Crawford, Thomas Thorowgood, Bondinot, and several others, with regard to the Jewish origin of the Indians, we shall quote Adair, who, after having lived forty years among the tribes of North America, certifies that the natives of the New World are the descendants of the Hebrews.† Adair principally grounds his assertions on the Indian customs, which actually do in many points bear a close resemblance to those of the Israelites.

Like the Jews, the greater part of the Indians offer the first-fruits of the earth and of the chase to the Supreme Being; they have also ceremonies of expiation at fixed periods, and they divide the year into four seasons, which correspond with the Jewish festivals. In some parts of America the brother of a deceased husband

* Orbis Novis, seu Descriptio Indiæ Occidentalis.

† History of the American Nations.

receives the widow into his cabin, and considers her as his legitimate wife. Acosta and Lopez de Gomara positively state that they had seen circumcision practised among many American tribes. We also find an analogy between the Hebrews and the Indians in their purifications, the use of baths, anointings, fasts, manner of praying, abstaining from the blood of animals, and from certain quadrupeds, birds, and reptiles, considered impure. A fact also worthy of note is, that in general the Indians are allowed to marry only persons of their own tribe. But what is still more striking in all these customs is that many of the Indian nations of North America carry about with them a kind of ark, similar to the one spoken of in the Old Testament. This ark is never laid on the ground; it is placed on a pile of stones or of wood, and no one is ever permitted to see what it contains. The Indian priests preserve this sanctuary with the utmost care, and the principal Sachem of the tribe wears on his forehead a wreath of white feathers, and on his breast a shell ornamented with stones, that reminds one of the *Urim* worn by the Jewish high priest. In the latter part of Adair's work several other points of resemblance are also to be found, which either escaped the notice of those who maintained that the Indian tribes were of Jewish origin, or which they did not think necessary to mention.

The festival of the first-fruits of the earth is celebrated amid dances and chants, wherein the mysterious words YE-MESCHICA, HO-MESCHICA, VA-MESCHICA are frequently repeated. M. Adair perceives in the first syllable of these three words the name of JEHOVAH, and that of Messiah, which is repeated three times after. In other hymns, you hear the word *aylo*, that corresponds with the Hebrew

word *El* (God) *hiwah hydihyra*, the immortal soul; and *schiluhya*, *schiluke*, *schiluhva*, resembling the word *schaleach*, or *schiloth*, messenger or pacificator. But as we are not acquainted with the Hebrew language, we leave to Mr. Adair all the responsibility of what he advances. The same author adds, that he once heard Indians apply the following expression to a culprit, "*Tschi kaksit canaha;*" Thou art like unto a Canaanite sinner.

Unfortunately, the writers who have treated this subject do not agree either with regard to the epoch of the emigration, or the route taken by the Hebrews: some make them come directly across the ocean, and land on different coasts of America, in the regions of the trade winds and of the submarine currents; but the majority of these writers think that the Hebrews traversed Persia and China, and thus arrived in the New World by Behring's Straits.

One author considers the Canaanites as having been one of the first people, who, quitting Mauritania Tingitana, sailed to the Gulf of Mexico, and took possession of the sea-coast. This idea corroborates the belief of those who fancy that the Canary Islands were peopled with Canaanites. Ancient history mentions three distinct Mauritanias: the Mauritania Tingitana, the Mauritania Cæsariensis, and the Mauritania Sitifensis. The first, which constitutes the kingdom of Morocco, was called Tingitana, from *Tangis*, its capital; this name afterwards turned into that of Tanja, and was finally changed into the word Tangiers, according to M. F. Hawks, translator of the Peruvian Antiquities. It would be then from Tangiers that the Canaanites embarked, after having been expelled by Joshua; and if we remember the inscription found in that town, and which we cited in

speaking of Votan's travels, we shall see that there must have been at a very remote period, some embarkations of Asiatic emigrants in that port.

But it is not only to ancient times that we can trace emigrations to America, from the beginning of the Christian era till Christopher Columbus's discovery; it may be affirmed that the intercourse between the Old and the New World was never completely interrupted. Before we speak of the authentic documents which certify this fact, we shall record here the opinion of many savants who believe that the god Toltèc Quetzacoatl is the same person as the apostle St. Thomas, because the surname Didymus (twin) given to the apostle, has the same signification as the Mexican word Quetzacoatl.* Although this opinion appears to be rather hazardous, yet one cannot help being astonished at the extent of the regions traversed by St. Thomas; it is true that some writers do not allow of his having gone beyond Calamita, a town in India, the site of which is doubtful; but others assert that he went as far as Meliapour, on the side of the Coromandel, and even unto Central America.

According to Sandoval, a succession of emigrations came from Ceylon, and from the south of India, to America, many centuries before Christopher Columbus. Marco Polo and John Banking certify that Manco-Copac, the first Inca of Peru, was the son of the great Kublai Khan, and Montezuma, the grandson of Askam, a noble mogul from Tangut; and the celebrated M. de Humboldt is of opinion that the Toltècs derive their origin from the Huns.

But the hypothesis which surpasses in importance all those we have enumerated, is that of M. de Guignes,

* We leave all the responsibility of this similitude to its author.

who, relying on the Chinese chronicles, attributes the Peruvian civilisation to emigrations proceeding from the Celestial Empire and from the East Indies. Recent investigations seem to confirm this opinion. In the year 1844 M. Paravey proved that the province of Fu-sang, described in the Chinese annals, is nothing less than Mexico, which, according to the same annals, was known as early as the fifth century of our era. Carved figures representing Boudha of Java, seated on a Siva's head, were found at Uxmal, in Yucatan; this discovery, added to that of the Asiatic statues and shells, of which we shall speak in the chapter that treats of Antiquities, gives M. Paravey's statement unexceptionable weight.

In the same way that the Icelandic documents are of great value in verifying the arrival of the Scandinavians on the coasts of the new continent, in like manner the Chinese chronicles, preserved in the work entitled *Pran y tien*, are of equal value in proving the communications that were interchanged between Asia and America by means of the Pacific Ocean. History informs us that a long struggle, which had arisen between the two religious sects of the Brahmins and the Buddists, was put an end to by Chamons of Thibet emigrating to Mogoly, China, and Japan. If this Tartaric race crossed to the north-western shores of America, and afterwards spread over the banks of the Gila and of the Missouri, as Vater's etymological researches would prove, it is by no means astonishing to find amongst the semi-barbarous nations of the New World, idols, monuments, and hieroglyphical writings, the knowledge of the length of the year, and traditions concerning the origin of the world, all of which recall to one's mind the arts and the

religious systems of the ancient people.* In support of the assertion with regard to the Asiatic emigrations, we can cite Dr. J. G. Muller's able work †, which shows a striking analogy betweeen the Budda and Brahma religion and that of the Mexicans. Among the oriental Indians, Brahma (the divinity in general) was represented by the Trimurti (which corresponds in some degree with the Christian Trinity), or God under three forms, viz. *Bramah*, *Vischnu*, and *Siva*. In like manner the Mexicans adore the Supreme Being under the triple form of *Ho*, *Huitzilopochtli*, and *Tlaloc*, which represents the Mexican Trimurti. The attributes of the goddess *Mictanihuvatl* are perfectly analogous to those of the implacable and sanguinary *Kali*. Also the legends concerning the Mexican divinity *Teayamiqui*, resemble those of Bhavani, who, as well as Kali, was the wife of Siva Budra. Leaving out of view the Peruvian Trimurti, *Con*, *Pachacamac*, and *Huiracocha*, as also the striking likeness that exists between the Asiatic idols and those of America, and several other points of analogy to be found in the different religions, we must admit that the worship of *Fo* in China, of *Budda* in Japan, of *Quetzacoatl* in Mexico, of *Manco-Copac* in Peru, like the Lamaïsm at Thibet and the Dschakdschianuim doctrine of the Mogols and Calmouks, are all only branches of the same trunk, the roots of which were in Asia.

But none of these conjectures are equivalent to the historical proofs which the Scandinavians have preserved of their migrations to Greenland and to other parts of the American continent. The Icelandic and Celtiberic inscriptions found on rocks, on stones, and in tombs, in

* See Humboldt, Monuments Américains.

† Der Mexicanische Nationalgot Huitzilopochtli.

the northern and eastern states of the American Union, confirm the assertions of the Danish archæologists and writers.* At first these inscriptions were confounded with the pictographical monuments that the Indians are in the habit of erecting when they wish to perpetuate the recollection of their deeds; but on more serious examination the difference was perceived, and the archæologists acknowledged their mistake. Other historical data would also lead us to believe that in the Middle Ages Biscayans, and even Venetians, had known America before Christopher Columbus.† All those navigators must have sojourned there, more or less, to procure fresh provisions or to repair damages; and doubtless a great number of them did not return, either on account of the bad state of their vessels, or because they were charmed with the beauty and fertility of the country. In speaking of the Indian antiquities, we shall see that the ancient people of the new continent were more civilised than the Indians of those days, and this assertion perfectly agrees with their traditions, which say that at a very remote period their ancestors were more powerful, more learned, and more wealthy than the present populations.

To follow the chronological order of events, we shall first speak of the emigrations of the Ires, or tribes from Ireland, who emigrated to Iceland and to America at rather uncertain epochs. "The opinion of some savants, familiar with the antiquities of the New World, is that if, in the most ancient documents of Iceland (as

* See also, Beskri fning om de Swenska forsam lingars oma och nerwarende tilotand uti nya swerige sedan nye Nederland; in 4to., Stockholm, 1759.

† St. Gregory, in his comment on the Epistle of St. Clement, assures us that beyond the ocean there is another world.

may be seen in the manuscripts) the first inhabitants of that island are called *men come by sea from the west*, we must consequently conclude that Iceland was not peopled by colonies coming directly from Europe, but by Ires, who at an early period had been transplanted, and who returned from Virginia and from Carolina, that is to say, by men who, after having inhabited *Great Ireland*, the part of America named *the country of the white men*, came to settle at Papyli on the south-eastern coast of Iceland, and in the little isle of Papar, in the neighbourhood of this coast." * As to the voyages of the Irish to Iceland, we will here cite a most important passage of the manuscript, *De mensura orbis terræ*, written in 825 by Dicuil or Dichullus, Abbot of Pahlacht in Ireland. After having spoken of the island of Thule, he gives concerning it the following details which were communicated to him by clerks (clerici):

"It is just now thirty years ago since the clerks who had lived in that island, from the calends of February to those of August, related to me, that not only during the time of the summer solstice, but even for some days before and after it, the sun disappears for a short period, and seems to hide himself behind a hill, so that even during this short absence you are not deprived of daylight, but can see clear enough to undertake all kinds of occupations: . . . . it is probable that if you were on the summit of a high mountain, you would not see the setting of the sun. . . . . Besides, those who have written that this island was surrounded by a sea of ice, have evidently deviated from truth, as likewise those who pretended that from the vernal equinox to the autumnal you enjoy

* Humboldt, Cosmos, vol. i.

uninterruptedly the light of the sun; and *vice versâ*, that you were deprived of it until the vernal equinox of the following year; for, the aforesaid clerks, who had rowed towards this island in frosty weather, were able to land on its shores; and while living there, they continually saw the alternation of day and night. It is true that at a distance of one day's navigation northward of this island, they found the sea frozen."

"There are a great many other islands * in the ocean to the north of Brittany; the ships going under full sail, and wafted by a favourable wind, take two days and two nights to go thither from the northern islands of Brittany. An ecclesiastic, well worthy of credence, told me that after having sailed, during the summer, for two days and one night, in a little ship with a double range of oars, he landed in one of those islands. The greater number of them are small; almost all separated from each other by very confined straits: *they were inhabited, about a hundred years ago*, by hermits who came out of our Scotia.† But they are as if they had been *deserted* since the beginning of the world; thus they are abandoned by the anachorets, *on account of the roaming of the Normans*, but are filled with innumerable multitudes of lambs and of divers kinds of sea fowl: we have not found those islands mentioned by any author."

M. Letronne, the commentator of Dicuil, relying upon these two paragraphs, ingeniously proves that the Irish anchorets having been driven from the Feroë Islands by the Normans, began to visit Iceland in the

* The Feroë Islands.

† In the middle ages the words Hibernia and Scotia were applied to Ireland indifferently; it was only about the reign of Malcolm II. that Scotland began to bear the latter name.

second half of the eighth century, and that they lived there, either in Irish fishery establishments, or in monasteries founded by pious hermits, who were eager to surpass virtue even the holy monks of the Thebaid. In the prologue of the *Landnamabok*, or book of the origins of Iceland, printed in Icelandic and in Latin, it is said: "*Before Iceland was inhabited by Norwegians*, men were to be found there whom the Norwegians called *Papas* (or Papaz, fathers); *they professed the Christian religion*, and were said to have come by sea from the west; for they left *Irish books, bells, and other objects*, which were found after them, and which seem to indicate that these men were from the west. All those objects were found in the districts of Papeya and Papyli on the eastern coast. Even in the present day there are English books to prove that expeditions towards those latitudes were heretofore very frequent.*

Thus according to the historical documents of Iceland, an Icelandic district had been already inhabited, before the arrival of the Scandinavians, by Irishmen who not only visited it, but had actually sojourned there. Now if, as we may conjecture from the testimony of this writer, the things found in Iceland belonged to the Irish anachorets who came thither from the Feroë Islands, we naturally inquire why the (Papas), friars, were called, according to the tradition of the country, *Vestmenn* (men from the west), or Kömmir til vestanum haf (come from the west by sea?) Evidently they were navigators from Huitramannaland, whose ancestors, at an unknown period, had colonised the eastern shores of the New World.

In the latter part of this chapter we shall prove that this assertion is not a mere conjecture, but a positive fact,

* Landnamabok sive de Orig. Island. lib. in prolog.

based upon authentic traditions, and admitted as authentic in the domains of history.

In the second part of the ninth century, probably in 860, the pirate Naddod was the first Scandinavian who landed in Iceland, driven there by a tempest, whilst he was sailing from Norway to the Feroë Islands.* "This pirate climbed to the summit of a very lofty mountain on the eastern coast, to see if he could discover any dwellings. As he found nothing of the kind he returned to the Feroë Islands." These details, supported by other authorities, appeared to Torfæus, and to many other Danish savants, as sufficient to establish that the Feroë Islands were the pivot of Naddod's expeditions; and they find no difficulty in designating this pirate *incola Fœreyarum.*† In 863, a Dane named Garder was the first who made the Normans acquainted with this island; and in 874 Ingolf, the Norwegian, founded the first Scandinavian establishment there. Such was the insufficiency of the resources afforded for the wants of navigation by that isolated and forsaken corner of the earth to a noble and vigorous, but poor race, that notwithstanding the proximity of the Labrador, situated opposite Greenland, 125 years passed between the foundation of the only Norman establishment in Iceland, and the great discovery of America by Leif.

The colonists belonging, for the greater part, to the most distinguished and enlightened families of the north, established a flourishing republic in Iceland. The situation of the island, and the intercourse that the young colony kept up, during its early period, with foreign nations, must eventually have led it to develop the art of navi-

* Codex Flateyensis, Op. Torfeum in His. Norv.

† Torfæus Arngrimus, Joannes Finnæus ad lib. Orig. Irland.

gation, the knowledge of which was an inheritance from its ancestors, and afterwards inspired it with the desire to go and discover other countries beyond the ocean. Already, in 877, Gunbiorn, the Icelandic navigator, saw for the first time the mountainous sea-board of Greenland.*

According to the Scandinavian manuscripts, in which are to be found the accounts of the Normans' first voyages to America, and which, most probably, were compiled in the twelfth century by the learned Thorlak Runolfson, author of several ancient ecclesiastical codes, it was an Icelander, and grandson to Torfinn Karlsefne, who commanded the greatest expedition that sailed at that epoch towards the new hemisphere; from these precious manuscripts, it would appear that in 983 the celebrated Ari Marsson of Beykjanes, belonging to the powerful Icelandic family of Ulfe, the squint-eyed, whilst sailing southwards, was cast by the storm upon the American coast, to which he gave the name of *Irland it Mikla*, or Great Ireland. In 986 Eric, surnamed the Red, established on those shores the first colony composed of Icelandic emigrants. This colony was founded on the south-west coast, in the country where later, in 1124, was erected the bishopric of Gardar, which lasted for upwards of 300 years.† In the same year 986, Byarne Herjufson leaving Greenland, discovered the island of Nantoucket, one degree below Boston, then Nova Scotia, and finally Newfoundland.

Stimulated by Byarne's account, Leif, the eldest son of Eric the Red, purchased a vessel and sailed in the year 1000, with thirty-five companions, in search of new discoveries. Leif approached the shores already visited by

* Rafn, Discovery of America by the Normans.

† Bull of Pope Nicolas V., ap. Egid.

Byarne, and gave Newfoundland the name of Litla Helluland. He re-embarked and arrived in the country situated between Newfoundland and Canada, and called it Markland. At last he landed on an agreeable coast, where a certain German named Tyrker, who formed part of the Expedition, found great abundance of vines, which caused it to be called Vinland, (country of the vine, or of the wine); it is now New England. Leif had spacious houses built in that locality, and named them *Leifsbudir*, after himself; he then fixed his residence there for some time. In this principal establishment of the Scandinavians, the colonists had often to contend with the Esquimaux, who at that time spread themselves much more towards the south than they do of late. It was in the year 1121 that the first bishop of Greenland, Eric-Upu, of Irish origin, undertook to go and confirm the colonists of Vinland in the doctrines of Christianity.*

In 1002 Thorwald Ericson, Leif's brother, commenced a new voyage in the same vessel, and visited the coasts already discovered by his brother; in 1004 he penetrated near Cape Cod, where now stands the town of Boston; he had a rencontre with the Skrellings (Esquimaux), and was struck by an arrow under the arm, from which wound he died. Thorwald was buried in a spot he himself had chosen, and which received the name of *Krossanes* (the point of the cross).

In the year 1006 Thorstein, Eric's third son, embarked for another expedition, which was unsuccessful; overwhelmed with sorrow, he returned to die in Greenland, without having been able to see the countries that his brothers had visited. His widow Gudride married Thorfinn Karlsefne, an Icelander, and the most celebrated

* Rafn, Antiquitates Americanæ.

amongst the first explorers of America, who, according to the ancient chronicles, reckoned Danes, Swedes, Norwegians, Scotch, and Irish among his ancestors, some of whom were even of royal blood. At Gudride's request, Thorfinn resolved on making a voyage with her in the south. In 1007, with the help of Snorre Thorbrandson, he equipped a flotilla composed of three barks, with a crew of one hundred and sixty men, who carried with them all the necessary provisions to establish a colony. Then abandoning the route that had been followed up to that time, he took a more southern direction, and stopped at the island called *Martha's Vineyard*, from thence he sailed towards the west, and spent two winters in the bay of the *Mount of Hope*, close to Seconnet, one degree and a half latitude nearer to New York.

Unfortunately the friendly intercourse that existed between the Scandinavians and the Esquimaux was not of long duration; the latter attacked the navigators with superior forces, and would have completely exterminated them, had it not been for the unheard-of courage of a woman named Freydis, who rescued them from their enemies. This deplorable event induced Karlsefne to abandon the plan he had formed to colonise the coasts, and he returned to Greenland in the beginning of the year 1011.*

Up to the middle of the fourteenth century, the information to be had concerning the progress of the Scandinavian-American colonies, and their intercourses with Greenland and Iceland is very meagre. The colonists erected on the Eastern shore of Baffin Bay, north-west of Upernavik, in one of the *Isles of the Maidens*, three

* Rafn, Antiquitates Americanæ.

monuments, with Runic inscriptions, bearing date 1135. According to Rafn, the Runic stone was placed on the highest point of Kingiktorsoak, "on the Saturday before the triumph," that is to say, on the 21st of April, which was a great Pagan festival, and which was afterwards changed into a Christian one when Christianity was introduced there. One is justified in supposing, from the number of monuments, inscriptions, arms, utensils of all kinds, and human bones recently discovered in the States of Rhode Island, Massachusetts, and others, that the Norman emigrations have been much more considerable than what the Scandinavian manuscripts would lead one to believe.

As early as the twelfth century, Greenland had suffragan bishops from Hamburg. Up to 1418, the Norwegian colonists established on those frozen shores paid to the Holy See 2600 pounds weight of morses' teeth, as tithe and St. Peter's pence. In 1266, the priests of Greenland belonging to the bishopric of Gadar, conducted an expedition of fishermen, who left Baffin Bay to fish from the straits of Lancaster unto those of Barrow.*

In Thorfinn Karlsefne's historical account, and in the Iceland *Landnamabok*, the southern coasts comprised between Florida and Virginia are called *Huitramannaland* (country of the white men), and even Great Ireland. This statement is in perfect accordance with a tradition of the Esquimaux, which says, that in their neighbourhood was to be found a nation of white people, habited in white garments, who sang frequently, and make use of long sticks, from the top of which hung bits of stuffs.

* Wilhelmi ueber Island, Huitramannaland, Groenland, und Vinland.

This tradition can be explained from the testimony given by Ari Marsson's grandson, the celebrated Ari Frode, who certifies, "That certain Irishmen assured his uncle, that from the verbal account given by Jarl Thorfinn Sigurdson, native of the Orkney islands, the name of Ari Marsson was known in Huitramannaland; one version even says he was baptized there; that this intrepid navigator had great authority in the country, but that the natives did not allow him to leave it; and that a Catholic population inhabited the same territory. The men clothed in white, the stuffs floating from the top of sticks, and the chants mentioned by tradition, exactly correspond with what we see in the present day in the Catholic processions. Jarl Thorfinn's narratives clearly indicate that at an epoch anterior to that of Ari Marsson's arrival in Huitramannaland there already existed communications between Ireland and the north-east of North America.

In the same manuscripts you find another account, which changes Jarl Thorfinn's conjectures into certainty. Bioern Asbrandson, surnamed Breidikingakappi, member of the famous league of the heroes of Jomberg, and one of the bravest combatants at the battle of Tyrisvalle in Sweden, became enamoured of Thuride, sister of the mighty chieftain Snorre Gode of Iceland, and on account of this intrigue was obliged to emigrate in the year 999. He embarked at Hrannhöfen (Snäfellsness); drifted by a north-east wind, the vessel was soon out of sight of land, and disappeared in the horizon. For a considerable length of time Bioern's fate was quite unknown, and every one believed that he had perished at sea. At last, an Icelandic merchant, named Gudleif Gudlangson (brother of Thorfinn, ancestor of the famous historian, Snorre

Sturluson), wished to return from Dublin, where he was, to Iceland his own country. The ship in which he embarked was assailed by a violent tempest coming from the north-east, which dashed it first towards the west, then towards the south-west, and after a long and perilous voyage he reached an unknown shore. Scarcely had Gudlief landed, when he was seized by the natives, who came in crowds to meet him, all speaking a language that resembled *Irish*. A venerable old man on *horseback*, of noble and commanding appearance, preceded by a standard bearer, directed the natives, and ordered them to bring Gudleif to him; then addressing the latter in Scandinavian, he asked his name, and from whence he came. On learning that his prisoner was an Icelander, the old man revealed to him that he was Bioern Astrandson, after which he set him at liberty, as likewise his companions, advising them to leave so inhospitable a country as soon as possible. Gudleif returned to Dublin, carrying with him a ring for Thuride, and a sword for her son, which Bioern had given him for them; and the following year he went to Iceland, where he transmitted Bioern's presents to their destination.

This story, written shortly after the events had taken place, is an important proof in favour of the opinion generally admitted, that Irish colonies existed in Huitramannaland, that is to say, in the Carolinas, and even, in all likelihood, as far as Florida, and that those colonies were established long before Leif had discovered the New World.

The last voyage registered in the Scandinavian history is that of a vessel which sailed, in 1347, bound for Nova Scotia, to fetch from thence wood for building: tossed by a gale, it was obliged to put into Straumfjoerd,

on the western coast of Iceland. The great plague that ravaged Europe about the middle of the fourteenth century, and which particularly depopulated the north, spread also to Greenland. Afterwards commerce with this region became the regal right of the crown of Norway. To all these causes of decline was finally added, in 1418, the invasion of an enemy. A fleet, probably belonging to Prince Zichmni of Friesland, came, it is not known from whence, and destroyed all the colony by fire and sword.

Finally, the account given by the brothers Zens, the authenticity of which M. Malte Brun, in his History of Geography, says is indubitable, contains most curious notions about those northern countries. It makes us acquainted with the savages of New England as far back as the fourteenth century, speaks of the more civilised nations towards the south-east, and afterwards of polished peoples, who understood the use of precious metals, and built towns and temples, wherein they offered sacrifices to their idols. This narrative completes thus the historical data concerning the New World, commencing in the obscurity of the most remote antiquity, and ending at the epoch of Christopher Columbus's discovery.

PART II.

ORIGIN OF THE AMERICAN NATIONS.

CHAP. IV.

THE INDIANS ARE NOT AUTOCHTHONES. — THE ANIMAL KINGDOM IN AMERICA. — EDEN NOT THE BIRTH-PLACE OF THE WHOLE ANIMAL CREATION. — THE FLOOD. — SPECIES OF ANIMALS WHICH HAVE DISAPPEARED. — FOSSILS. — THE DIFFERENT REVOLUTIONS OF THE GLOBE. — THE HUMAN RACE. — THE UNITY OF RACE. — ON DIFFERENT TYPES. — BIBLICAL COSMOGONY. — ANTHROPOLOGICAL CLASSIFICATION OF THE HUMAN KINGDOM. — THE INDIANS OF THE NEW WORLD.

FROM the details we have just given concerning the different emigrations to America, which took place prior to the discovery of Christopher Columbus, it will be readily perceived that there is no necessity for having recourse to the hypothesis of a special creation, in order to explain the origin of the great population found in the New World, in the fifteenth century, by the Spaniards. If the Indians were autochthones, we should find, both in their external conformation and in their civil organisation, something peculiar to themselves. So far, however, from this being the case, they appear, with some slight exceptions, to have borrowed everything—their religion, their manners, their customs, and their industry—although in so doing they have naturally introduced such modifications as might be expected from their peculiar wants, their

climate, their geographical position, and the degree of civilisation which their different tribes have attained.

Laying aside for an instant our religious convictions, in order to examine with more freedom the different theories and facts, we have been unable to find any plausible objection against the historical veracity of the Mosaic account. The most careful study concerning the origin of the Red Skins, made on the spot, has confirmed us in the belief that there is nothing in science to contradict the Bible, which represents Adam as the sole stock whence sprung the three great races which form the principal types of the human family.

America, it is said, is inhabited by a peculiar people, and by animals which do not exist on the old continent, and, consequently, a partial creation of men and animals must have taken place in that country, having nothing in common with the antediluvian creation spoken of in Genesis. We do not think that this argument admits of the conclusion drawn from it, for the presence of these animals, in countries so far removed from the spot assigned by Scripture as the birth-place of the world, is not a whit more strange than the existence of Alpine plants on the summits of the Himalaya. We must, however, confess that the actual configuration of the earth renders it somewhat difficult to account for the difference existing between the animals of the two hemispheres; but this difficulty is considerably diminished, when we bear in mind that the diluvian catastrophe has greatly changed the aspect of the globe, which is no longer what it was before the Flood. During the long course of ages which elapsed between the creation and the deluge of Noah, the brute species had quite sufficient time to spread themselves, and propagate in the countries best adapted to their zoological

organisation, as they must also have done upon leaving the ark. The great communications by means of which men and animals were enabled to pass from one continent to another, were, in all probability, only interrupted by the diluvian cataclysm. But admitting that the oceans are no longer what they were at the time of the creation, and that those animals, to whose propagation the American climate was the most favourable, might have travelled to the countries assigned to them by Providence, by passing over continents which now lie buried beneath the sea—admitting all this, yet we do not think that we are advancing anything contrary to the Mosaic account in saying that God did not create all the animal species in Eden. His all-powerful word must have instantaneously covered with plants and animals the remotest continents and the most distant islands, and have preserved them from destruction by only permitting the deluge to be universal in a relative and successive manner—that is to say, in such a way that the animals which were designed to preserve the greater part of the species now existing should have time to take refuge on those heights which the waters did not reach.

If Eden were the birth-place of mankind, it certainly was not the birth-place of the whole animal and vegetable creation; for the works of God invariably bear the impress of Divine wisdom, and to have created in Eden the reindeer of Lapland, the lama of Peru, the kangaroo of Australia, and the ostrich of the Sahara, would have been as useless as to people the coasts of Tyre and Sidon with the whale of Greenland, the tortoise of the Gulf of Mexico, and with other fishes which only live in intertropical and hyperborean regions. We therefore think that animals of every species, both of the sea and of the land,

were placed at the moment of their creation in the regions best suited to their zoological constitution and the propagation of their race.

When we consider the ways of Providence, we perceive that it rarely has recourse to extraordinary means for the attainment of an object which can be equally well brought about by means of a simple nature. It is for this reason that we seek to demonstrate, in as easy a manner as possible, the existence in America of animals which are not to be found in the Old World. And, indeed, if it be admitted that the species which are common to both continents must have had the same origin, it necessarily follows that the particular species missing in one of those two continents may formerly have existed there, for the disappearance of races and species does not constitute a phenomenon more difficult of explanation than does their existence. We know that every century witnesses, if not a complete extinction, at least a diminution in the species and roots, or primitive stocks. In France, England, Ireland, and in other countries, there are turf-pits containing the skeletons of numerous individuals which have disappeared, and whose former existence is only revealed by the discovery of these vestiges belonging to a period more or less remote. America being a comparatively new country, it is not astonishing that we should find there animals which no longer exist anywhere else.

If, however, these opinions should be thought too bold and far-fetched the reader may adopt that of St. Augustine, who considers that God may have created after the deluge new varieties of animals, in order to people those countries to which, by their nature and physical structure, they were adapted.* Or, again, it may be presumed that

* D. Aug. lib. xvi. de Civ. Dei, cap. 7.

God in his wrath, when decreeing the destruction of the animals He had created, made some exceptions, and that He even spared other just families, like that of Noah, from the general doom. It is true that the text of Scripture is very clear: "And the Lord said, I will destroy man whom I have created from the face of the earth; both man, and beast, and the creeping thing, and the fowls of the air." * But this text must not be understood in literal sense, for every man and every animal did not perish in the flood, any more than every soul is necessarily saved from perdition by the coming of Jesus Christ, who nevertheless came to save the whole of mankind. Is it, therefore, impossible that God may have saved from the great cataclysm, which was to destroy every living being, and to cause such perturbations in our globe, other species of animals and other families besides those contained in Noah's ark? There exist, both in Asia and in America, *elevated plateaux* which might have served as places of refuge to such as God had vouchsafed to spare. There are in science as in theology many vague and indeterminate points, which man may examine without incurring the imputation of extravagance.

It is a positive fact, recorded in history, that Noah's ark did not contain all the animals which peopled our hemisphere before the flood; and it is a fact no less certain, that many species of animals were completely destroyed, either during or before the deluge, and are only to be found now in a fossil state. Fossils are an important discovery in the theory of the earth's configuration before the deluge; they demonstrate in a striking manner, the successive periods and the series of different operations which have taken place in the formation of the

* Genesis.

globe, and furnish a proof that the earth's crust has not always been the same, inasmuch as the animals discovered deeply embedded in its bowels must formerly have existed on its surface.

It is also to fossils, says Cuvier*, and notwithstanding the limited extent to which they have been studied, that we are indebted for the little we know concerning the revolutions of the globe. They show us that the layers which contain them have been gently deposited in a liquid, that they have undergone changes corresponding to those of the liquid, that they have been exposed to the air by the withdrawal of the liquid; all of which could not be proved without the existence of fossils.

The presence in layers of the bones of quadrupeds, and especially of their whole bodies, shows that the layers themselves must have formerly existed in a dry state, or at least in the vicinity of dry land; and as those animals have disappeared we may conclude with certainty, either that those layers have been inundated, or that the dry land has ceased to exist. It is also to these fossils that we are indebted for the confirmation of the important fact of the inroads made by the sea, — a fact we should not have learnt by the mere discovery of sea-shells and other marine productions. †

Considered with regard to their species, ninety of these animals, at least, are as yet unknown to the naturalist; eleven or twelve bear so close a resemblance to known species, that it is hardly possible to entertain any doubt concerning their identity; while the remainder possess many points in common with the known species.

* Discours sur les Révolutions de la Surface du Globe.

† Ibid.

Considered with reference to zoological classification, there are in the ninety unknown species nearly sixty which belong to new genera; and out of the hundred and fifty species about a fourth part consists of oviparous quadrupeds, and the other three-fourths of mammalia. It would, however, be premature to draw any conclusion from these numbers, for much more money has been made by the discoveries of large species, which are more calculated to arrest the attention of workmen, than by the smaller ones, which are generally neglected, unless they happen to fall in the way of a naturalist, or attract popular attention, either from some peculiar circumstance or from their extreme abundance in certain localities.

Long before Noah, the Ichthyosaurus, the Plesiosaurus, the Megatherium, &c., had ceased to exist; the deluge destroyed other species which were not contained in the ark; and as the races now existing are in no way modifications of the earlier races found among fossils, we may infer that it is a well-established fact, that all the created species were not preserved in the ark, as is said in the text of Genesis; and consequently there being no necessity to interpret this text in a literal sense, much freedom and latitude may be allowed in making scientific researches, and in establishing hypotheses which need not be fettered by literal adherence to the Scripture text.

We take the liberty of introducing here a passage from Cuvier, which throws some light on the disappearance of the animals of the antediluvian world: "When I assert," he says, "that the *couches meubles* contain the bones of several genera, and the stony banks those of several species, which severally no longer exist, I would not be understood to maintain the necessity of a second creation, in order to produce the species now existing; I only

observe, that they did not exist in those regions where they are now to be seen, and that they must have come thither from elsewhere.

"Let us suppose, for example, that an extensive inroad of the sea should cover the continent of Australia with a quantity of sand and other rubbish; it would bury the bodies of the Kangaroo, the Phascolomes, the Dasyures, the Perameles, the Phalangers (*flyings*), the Echidnés, and the Ornithorhyncuses; and would destroy the species belonging to all those genera, since none of them now exist in any other country.

"If we further suppose that the straits which separate Australia from the continent of Asia should, by this same revolution, become dry land, a road would thus be opened to the elephant, the rhinoceros, the buffalo, the horse, the camel, the tiger, and all the other Asiatic quadrupeds which would come and people a land where they had hitherto been unknown.

"What Australia would become on this supposition, is in reality the state of Europe, Arabia, and a great part of America, and perhaps at some future period, when other countries and Australia itself are examined, it will be found that they have undergone similar revolutions, —I had almost said mutual exchanges of productions; for let us carry the supposition farther; and after the emigration of the Asiatic animals into Australia, let us assume another revolution to have taken place, which destroys Asia and the land from whence they sprang; and naturalists who should observe these animals in Australia, their adopted country, would then be quite as much perplexed to ascertain whence they came as we are to discover the origin of those existing in our own countries.

"I apply this view of the question to the human species."*

In the great question concerning the origin of men and animals in America, too much stress has been laid on the interpretation of Scriptural texts; some writers maintaining, others refuting their literal meaning; if, however, they had sought to explain and reconcile Scripture with admitted facts and recent discoveries—if they had reflected on the long periods of years called "days" in Genesis—on the length of time which elapsed between the creation and the deluge, and even on the nature of the great geological revolutions brought about by the deluge—the question would have been greatly simplified, and would not have scared those persons who are content to judge of what they see without troubling themselves to seek for the causes of the phenomena which strike them.

The origin of the Indians does not appear to us a more difficult problem to solve than was the preceding one. It is well known that in men, as well as in animals, the species may undergo changes or modifications, brought about by the gradual operation of internal or external causes, or by crossing the breed; and that there is even no species in existence which does not contain a number of varieties.

Thus it is that we nowhere find two individuals exactly resembling each other, and that in the same family we see lame and deaf persons, tall and short ones, different complexions, and various kinds of hair and features. The individual remains always the same, but his external forms vary.

All those men who, by their profound learning, have acquired a universal and well-merited reputation, and

* Cuvier, Discours sur les Révolutions de la Surface du Globe.

who have studied the different types of the great human family, not in its excesses, its exceptional shapes, its exaggerations, its peculiarities, but in that which constitutes its essence and integrity, in that which constitutes its distinguishing character and nature, — all these admit the unity of the human species. The only point of controversy among the learned is, whether mankind sprang from a single stock, as stated in the Bible, or from several stocks identically the same, and placed at an unknown period on different parts of the globe.

After having considered the human species with regard to its physical aspects and the geographical distribution of its existing types, and also with reference to the changes it has undergone, owing to extrinsic causes, to the nature of the soil, the meteorological state of the atmosphere, the activity of the mind, the progress of the intellect, and that marvellous flexibility which adapts itself to every climate, M. A. de Humboldt continues to observe, that one species is less liable than any other to be influenced by nature, but that it nevertheless participates to a considerable extent in the life which animates our globe. "So long as our attention was confined to extreme specimens of the variations of colour and features," adds this learned writer in his "Cosmos," "and so long as the mind allowed itself to be prejudiced by the strong influence of first impressions, ethnologists were induced to consider mankind as consisting, not of simple varieties, but of different races essentially and originally distinct.*

The complete absence of any change in certain types, despite the influence exercised by the most contrary causes, especially that of climate, appeared to favour this view, notwithstanding the brief space of time over which

* M. A. de Humboldt, Cosmos, vol. i.

the observations recorded by history extend. There exist, however, on the other hand, still more cogent reasons in support of the unity of the human species; such as the numerous gradations in the colour of the skin and in the structure of the cranium, which have been brought to light in modern times through the rapid progress of geographical science; — the analogy observable in the causes which produce degeneracy among other animals, both wild and domestic; — and the positive facts collected concerning the limits prescribed to the fecundity of mixed breeds.

The greater part of the contrasts which formerly presented themselves have vanished before the learned investigations of Tiedmann concerning the brain of negroes and of Europeans, and the anatomical researches of Vrolik and Weber on the configuration of the womb.

"If we take a comprehensive view of the dark-coloured nations of Africa, upon which the important work of Prichard has thrown so much light, and if we compare them with the tribes of the South Indian Archipelago, and of the islands of Western Australia, with the Papous and Affourans (Harafores, Endemenes), we shall clearly perceive that the black complexion of the skin, the curly hair, and characteristic features of the negro are not always united in the same individual." *

The families of animals and plants, says one of the greatest anatomists of our age, John Müller, in his "Physiology of Man," undergo modifications during their propagation on the earth: within the limits allotted to the various genera and species they are perpetuated, and become types of existing variations. The present animal tribes have sprung from a combination of different causes and conditions, both external and internal, which

* M. A. de Humboldt, Cosmos, vol. i.

cannot be referred to in detail, and the most striking varieties are to be found among those which have been endowed with the most extensive means for propagating themselves on the earth. The human race belongs to a single species, which does not lose its fecundity by marriage, but perpetuates itself by generation. It is not a species of a tribe; if it were, sterility would attend its unions.

Whether we adopt the classification of Blumenbach, consisting of five races, (Caucasian, Mongolian, American, and Malay) says again M. de Humboldt; or whether, with Prichard, we recognise seven races (Iranian, Touranian, American, Hottentots and Bushmen, Negroes, Papous, and Alfarous), it is nevertheless true that these groups possess no typical or radical differences; nor anything which will enable us to make a natural and exact classification. Abstraction is made of what seems to constitute extreme specimens of features and colour, without taking into consideration the families of those nations which cannot be included in the above great classes, and which have been designated sometimes as the Scythian, sometimes as the allophylical race.

It would be as irksome as it would be useless to enumerate here all the systems, both new and old, invented by the human mind, in order to explain the formation of man, and the origin of the various families that people the earth, whose physical types differ from one another. We shall only observe with M. Henry Hollard, that whilst antiquity in the highest flight of its intellectual life, but lacking experience and abandoned to the sole resources of its genius, sought to explain the causes and the origin of the universe, and only succeeded by means of hypotheses which were soon swept away by the progress of science; on the other hand, a small nation in Syria, almost illiterate,

and with a genius little adapted to philosophy, had long since possessed on that important question certain simple, precise, and fundamental notions. The first chapter of the annals of this nation opens with these words, "In the beginning God created the heaven and the earth;" and proceeds not merely to describe nature as the work of one God, but also as a work gradually and successively created by adding one superstructure to another, and as only being completed by the placing of man on the summit of the edifice. Then for the first time every being had its appropriate place in the great whole, and everything was made to harmonise; the inferior stories having been constructed for the advantage of the superior ones. What do we learn from this cosmogony, from this first page of the Bible, which is its own commentary? That God alone had no beginning, that He created a universal matter, at first without form, and in a chaotic state, to which He imparted life, motion, and fecundity. He separated the waters, the atmosphere, and the soil; commanded the earth to bring forth plants; caused the depths of the ocean to teem with aquatic animals; peopled the air with birds, and created quadrupeds that they might spread themselves throughout lands covered with vegetation. Finally, man proceeded from the hands of his Creator, who, in order to complete his existence, gave him a companion of the same nature as himself.

In this system everything is referred to God. Every species proceeds from a special act of creation, and will perpetuate itself and continue to remain distinct from other species by a law of production essentially conservative. We may further remark, that the author of Genesis, whilst refusing to recognise in universal physical force the attribute granted to it by other cosmogonies

—viz. the production of living beings, nevertheless considers those beings as forming part of universal nature, in so far as they are composed of the same substances. God does not create a special matter for organised bodies; and in respect to this question, modern naturalists who, with Buffon, have admitted the existence of matter essentially organic from the time of its creation, are not only in opposition to the Bible, but far behind it. Sacred cosmogony shows us the earth as producing and nourishing living beings, but always at the command of God, who, in a word, formed the human body from the dust of the earth.

The very fact of the great human family being the superior and final link in the system of the creation of which it forms a part, excludes the possibility of its displaying so wide a variety as is observable in the other kingdoms which form the inferior and connecting links.

If, however, we examine successively the races which compose the human kingdom, we shall perceive that a great variety of types is discernible among them, although their number is always and everywhere extremely limited.

The naturalist, says M. Hollard, in his work on the diversity of the human family, (who, here as elsewhere, wishes to be exact and to obtain full details,) seeks in the human race that which he finds with more or less ease in the races of the zoological series, viz. the elements of the genus, which are defined by precise limits and susceptible of being numbered and classed, encounters the greatest difficulty in distributing the population of the globe into well-defined groups, and in determining the number of those groups.

This perplexity becomes but too manifest when we glance over the various anthropological classifications

which have been successively proposed. Blumenbach, as we have already observed, reckons five groups, Lacepede six, Cuvier three, St. Vincent fifteen, Desmoulin sixteen. Here let us observe that the American Indians are in general classed in one group, which proves either the wide range embraced by various types, or else a very imperfect knowledge of the different indigenous tribes who people the New World. Now, without speaking of the South American Indians, whom some writers class separately, the North American Indians are not confined to a single type; considerable differences exist in point of stature, colour, and physiognomy.

Without taking into account psychological differences, which, however, are not without importance in the classification of races, we find in America tribes composed of short and thickset men; others composed of giants; some red, some white, and some black; and besides these three strongly-defined colours, all sorts of shades, which connect the three like the links of a chain.

The majority of Red Skins in North America undoubtedly bear marks of resemblance, more or less remote, to the general aspect which characterises the original population of that continent, as compared with the inhabitants of other parts of the world; but a cursory glance merely reveals their physical diversity, to which our attention will be principally confined in the present division of our work. The discoveries made within the last few years, of American tribes, not hitherto described by ethnologists, explain the error into which learned men and naturalists have fallen, in supposing the Indians of the Great Desert to resemble those of the United States. But science, by daily opening to the view fresh horizons, is enabled to correct the errors of its first observations by the results of subsequent discoveries.

In drawing attention to the existence of the Zuñis, the Jemez, and the Indians, inhabitants of the *Pueblos* of New Mexico, the Mojaves, and other tribes unknown to ethnologists, we shall show that the types of those populations differ from those of other American tribes.

Too great a desire to generalise the physical appearance of the different nations of the New World has given rise to inaccuracies which prove the imperfection of the systems invented by the learned in support of their theories concerning the origin and classification of the human family. We shall not undertake to refute these systems; but, with the aid of quotations made from different authors, we shall lay before the reader such facts as are recognised by science, so that every one may be able to form an idea of the various opinions entertained by those who have written on the great question of the origin of the Americans.

CHAP. V.

THE INFORMATION EXTANT ON THE INDIANS ERRONEOUS AND INCOMPLETE. — THE INDIANS IN THE UNITED STATES, IN CALIFORNIA, AND IN COLUMBIA. — A VARIETY IN THE AMERICAN RACES. — ANTHROPOLOGICAL DESCRIPTION OF THE INDIANS. — THE RANGE EMBRACED BY DIVERS TYPES. — PECULIARITIES OF THE VARIOUS SPECIES. — THEIR SPECIFIC CHARACTERS. — THEIR SHAPE, FEATURES, COLOUR, AND HAIR. — THE GRADATION OF COLOUR FROM THE POLES TO THE EQUATOR. — HUMAN NATURE EASILY ACCLIMATISED. — ERRONEOUS OBJECTIONS WITH REGARD TO ACCLIMATISATION.

"THE discovery of the New World," says M. Bérard, in speaking of American types, "has occasioned ethnological disputes, in which religious zeal has played the part which might have been expected. It was indispensable, says Voltaire, that America should have been peopled by a great-grandson of Noah, and so Solomon's ships are made to visit Mexico. America is to be traced in Plato's works; the honour of discovering it is awarded to the Carthaginians; and, to confirm the fact, one of Aristotle's books (which he never wrote) is quoted . . . . In the midst of great afflictions, the Mexicans tear their clothes. Certain nations in Asia formerly did the same, and consequently they must have been the Mexicans' ancestors." Now it appears to us, that ridicule is not the only weapon required to demolish an argument, for it is far easier to turn an opinion into ridicule than it is to furnish proofs in confutation of it; we are therefore astonished to find a modern

author quoting Voltaire as an authority on ethnographic subjects, the more so as we should consider ourselves much to be pitied had no fresh light been shed on history and geography since Voltaire's time.

"The hypothesis ridiculed by Voltaire," adds M. Bérard, "has found earnest supporters in our time. The Toltecs and Aztecs, so great in arts, and who covered Mexico with splendid monuments, did not spring from that part of America. Some writers fancy they can trace their emigration from the north to the south, and even attempt to assign a date for the arrival in America of a Boudhist colony from Asia.*

"Even though a greater number of historical documents were brought forward to prove this emigration of Asiatics to America, I should not be the less disinclined to believe that the early Mexicans, who bore a close resemblance to the present North American tribes †, were the descendants of nations to whom they have not the slightest physical affinity.‡

"Several reasons induce us, on the contrary, to consider the North American savages as an entirely distinct race from the inhabitants of the Old World. The distinctive traits to be noticed are the peculiar shape of the skull, as pointed out by Morton (*crania Americana*) §, and which

* If this be an error, why does not our author prove it to be such?

† To which tribes does our author refer? The red tribes of the United States, the white tribes of New Mexico, or the black tribes of California? It is, perhaps, more convenient not to particularise.

‡ This physical affinity exists so clearly, that the Americans are called Indians on that account.

§ Since this work was published many important ethnographic discoveries have been made in Peru, and in the deserts of America, which much diminish the value of Mr. Morton's work. M. Cubi y Soler, in his famous work on Phrenology, completely does away with the im-

we shall describe later; the prominent nose *, a certain *hauteur* which pervades the expression of their features †; and, above all, the moral qualities; so faithfully described by Cooper, whose writings in that respect are certainly not romances.‡

"Who has not been forcibly struck by their taciturnity, their profound dissimulation, the perseverance with which they follow up their plans of revenge, the pride which prevents them from betraying the least curiosity, the stoical courage with which they brave their enemies in the midst of the most horrible sufferings; their caution, their cruelty, and the extraordinary subtlety of their senses? § It has been truly said, that they seem inaccessible to the gentler sentiments.‖ We may add, that their idiom bears not the slightest resemblance either to that of Asiatic nations, or to that of any nation in the Old World." ¶

portance attributed to the development of the facial angle; that author proves that negroes of very narrow intellect have had the facial angle more distinctly marked than highly intellectual Europeans.

* This prominence is not to be found in the Mexicans, nor in many tribes in the west and south-west.

† This expression is far from being the rule.

‡ Cooper's descriptions are faithful as regards the United States tribes; but not as regards the vast and thickly-peopled countries in the west, of which he had no knowledge.

§ This has been much exaggerated by romance writers, but it exists nevertheless, and proceeds from the mode of life among the Indians.

‖ Those who have said so are entirely ignorant of the character of the savages; and we shall be able to prove, not only that the Indians are accessible to the gentle sentiments, but also that they allow outward evidences thereof to escape them.

¶ This question is not to be solved so easily, on account of the multiplicity of the different idioms. The contrary opinion to that of M. Bérard's seems the most probable. During Prince Napoleon's visit to Greenland, M. de Saulcy of the Institute recognised many words and idiomatic expressions to be found in Eastern languages, in the Green-

Notwithstanding the moral and intellectual characteristics which establish so wide a difference between the North American aboriginals and the savage tribes in other parts of the globe, two talented writers have arrived at diametrically opposite conclusions respecting the early state of the inhabitants of America. A learned Swede, Dr. Martins, considers them as the degenerate descendants, relapsed into a barbarous state, of nations which were formerly civilised; while Chateaubriand thus winds up the parallel he has drawn between the Americans and the Arabs: — "The Americans convey to us the idea of savages to whom civilisation is as yet unknown; while the Arabs appear to be a civilised nation, relapsed into barbarism.*

"The general rules which I have laid down," continues M. Bérard, "apply, as may be seen, to North Americans. I shall now proceed to define the distinctions between them; but before doing so, I must except a considerable number of North American tribes, who do not share the characteristics already referred to.

"1. The Esquimaux towards the extreme north, who belong to the Mongolian tribes, and whose characteristics we are acquainted with.†

lander's dialect. Gaelic and Hebrew words are to be found in the dialect of the American aborigines. But we repeat, that a profound disquisition on the analogy between the languages of the Old and New World is still wanting, and the matter is therefore still left in doubt.

* We are not aware what knowledge of the Arabians M. de Chateaubriand might have possessed, but we are satisfied that he knew nothing about American savages, since his writings on the American tribes are pure romances, of which fiction is the staple, while historical truth is but slightly regarded.

† This admission is worthy of notice: the Asiatic origin of certain American tribes is not, therefore, such a ridiculous hypothesis as the writer seems to think.

"2. The Chippeways, not quite so remotely located as the Esquimaux, and who may likewise spring from Mongolian stock. Mackenzie, at all events, asserts that they are not aboriginal Indians.*

"3. All the tribes which inhabit the Rocky Mountains and the western coast of North America, from California inclusively to the regions inhabited by the Esquimaux. These tribes bear no resemblance to each other; the stupid and pusillanimous Californians, with their low foreheads and skins as black as that of Guinea negroes, but with a different cast of countenance to the latter, forming a contrast with an almost white tribe inhabiting countries much further north. Neither do they resemble the Mongols, whatever Desmoulins may say; for Lapeyrouse says clearly: 'The indigenous inhabitants of Port Français are not Esquimaux;' and the description he gives of them does not agree with the Mongolian type.

"Having noticed these exceptions, let me observe, that the vast continent of North America was inhabited by a race or species divided into numerous tribes, but preserving even to the present day the same characteristics that I am about to describe to you.

"The skin is of a reddish copper tint, which has given the name of Red Skins to these Indians. The name, as one may see, cannot apply to all the indigenous tribes, as we have already noticed an exception in North America.† South America affords us still more frequent exceptions.

* Another damaging admission. We must, however, observe that the Chippeways are not a distinct type, since many Indian tribes in the United States favour the same type.

† The writer should have said, *two* exceptions, since he allows that the Californians have a black skin, whilst a northern tribe is white. We might add a third, the Soones being Albinos.

On the other hand, the reddish tint is to be found among some of the Polynesians; and thus the distinctive trait is not at all sufficient, although it deserves to be noted.*

"The want of prominence in the occiput of the skull is what distinguishes American skulls (*crania Americana*), according to Morton. Seen from behind, the contour of the occiput is flat towards the protuberance, and swells out from that point to the base of the ear. The sides of the skull join one another closely from the parietal protuberances to the vertex, so as to present a conical, or rather a prismatic surface.

"M. de Humboldt has observed that no race has such a retreating, or so small a forehead. In many countries, and also in South America, the Indians, as is well known, have recourse to pressure to increase the flatness.

"The Algonquins and the Iroquois were the principal North American families, and occupied the great part of Canada, and that portion of the United States which lies to the east of the Mississippi. They included a number of tribes and nations which it would be useless to enumerate, and among which I shall only mention the Hurons. The tribes called Alleghanians by Mr. Prichard, were nearer the south. The Scioux occupied an immense tract to the west of the Mississippi; they included, amongst others, the Tetons, the Osages, and the Mandans.† Many of these savages have most singular hair, which is very long, and of a bright silvery grey colour.

* The presence of Red Skins in Polynesia is of the highest importance, as proving the influence of climate, food, and civilisation on the hue of the skin.

† Wrong. The Scioux, the Mandans, and the Osages are three distinct nations, with many material points of difference, both moral and physical.

"M. Desmoulins derives the origin of the North Americans from a race which he calls Columbian. More recently, the inhabitants of the regions north of California (but on the same coast, and which are included in the class I have specially excepted), have been denominated Nootka Columbians. The tribe of flat heads, among whom the ridiculous practice of deforming the skull, by flattening the forehead immediately after the birth, is prevalent, forms a portion of these Nootka Columbians.* Even now their heads preserve that singular shape, which you can see in our Museum, by the casts of the skulls of the early Peruvians. Dr. Scouler, who revealed the process used to obtain this result, has observed that the flat heads were quite as intelligent as the others, but more subject to apoplexy."

In the great tract comprised between the Rocky Mountains and the Pacific Ocean, the peninsula of Alaska, at the 60th deg. lat. N., and the Californian peninsula, a greater number of tribes, speaking different languages, and having different usages, characters, and features, are to be found, than in any other part of the American continent.

Between the 60th and 52nd degrees lat. N. the Indians bear a great resemblance to white men in many respects, especially in the colour of the skin and the thickness of the head. They are very skilful, and show great taste in manufacturing with a kind of slate very elegant dishes, pipes, figures, and cut ornaments. Their skill is displayed in their dress, their houses, and their boats, which are

* It was the Chinooks who were in the habit of flattening the foreheads of their children. The practice was, however, in vogue with many of the Western tribes, and with other nations now extinct.

equally well adapted to their climate and to their mode of life.

The tribes to the north of Columbia, such as the Wallawallas, the Tahkali Umkwas, the Taihailis, the Selishes, the Chinooks, the Yakones, the Calapuyas, and Nootkas of Vancouver's Island, are a very ugly race. The men are below the middle height, with thick-set limbs, broad faces, low foreheads, and rough, coppery, and tanned skins. Their moral deformities are as great as their physical ones. Their dialect is exceedingly difficult, and the harshness of their pronunciation incredible.

South of the Oregon, towards California, the appearance and disposition of the Indians have much analogy with those of the Indians residing to the east of the Rocky Mountains; their principal tribes consist of the Sahaptins, the Waiilatpus, the Shoshonies, the Lituanies, the Shastis, the Palaïks, and some others. They are of middling stature, slight, with long faces, thin lips, and a soft skin. They are taciturn, cold, and warlike, and love passionately those exercises which require courage and activity. There are no two nations in Europe so dissimilar as the tribes to the north and those to the south of Columbia. The Californian tribes, to whom we have already referred, are chiefly remarkable for their black skins and the obtuseness of their intellects, which places them beneath every other Indian tribe on the American continent. They are gentle, lazy, timid, and phlegmatic. The Indians to the west of the Rocky Mountains have neither the height, strength, or activity of those who live eastward of those mountains. The Oregon tribes have neither the two classes of chieftains—those who govern during peace, and those who command in war time—nor the ceremonies to initiate young men, nor the

distinction of clans, nor any great civil or religious festivals.

What precedes shows us that even those authors who consider the American Indians as a separate species, and designate them as the American race, are nevertheless obliged to admit that the race comprises several varieties which do not belong to the general type, taken from the Red Skins. As these varieties are yet more numerous than the learned writers who have treated these matters seem to imagine, we shall enumerate them later when we enter into particulars respecting the different tribes. At present we shall confine ourselves to the Red Skins, who along with the Negroes form the most powerful objection that can be raised to the theory of the common origin of mankind.

There are many points in which the tribes who are scattered from the Gulf of Mexico to Canada, and from the Alleghanies to the Rocky Mountains, differ, yet they have a general type, modified variously, it is true, according to the latitudes and the degrees of civilisation to which different tribes have attained, yet distinguishing clearly these aborigines from all other nations in the world. The angular head is pyramidal in shape, owing to the direction of the arches of the skull, from the eyebrows in front, and the parietal bumps on the sides, to the protuberance of the occiput. The occiput is flattened below this prominence, and swollen out laterally. The zygomatic arch is somewhat laterally spread, as is seen in the Mongol type. The nasal pits are large, and show a large development of the olfactory. The upper maxillary arch projects, and yet the incisors are not unduly prominent. The under jaw is rather massive, and its two branches form, not a projecting angle, but rather a curve. The nose,

which is more or less arched, large, and prominent, is the most striking feature of these North American Indians. The eye is in general rather almond-shaped than round, but not large. A copper complexion, straight black hair, sometimes silky, and but little beard, complete the portraiture of the Red Skin. They generally remain in a most uncivilised state; and their number is yearly thinned by sickness, intemperance, and desperate wars, the results of their mode of life. They are independent, haughty, gloomy, thoughtful, and obstinate. Their traditions, the numerous tombs found in these countries, all seem to prove alike a decline, the recollections of former grandeur, and the irritability of a conquered people. Chateaubriand was wrong when he saw in them the attributes of savages, on whom the future was dawning: on the contrary, theirs are the despairing efforts of failing energies.*

But we repeat that the unity of the type which we have described should not be too much exaggerated or generalised. Numerous variations in nations and individuals set aside this unity. Sometimes, the profile of the forehead and nose is arched like a crow's, so as to form a crescent: at other times we meet with a nose almost straight: and again with a broad face, with puffy cheeks, and prominent cheek bones. And then the hues of the skin, even among the Red Skins, comprise several shades betwixt brick red and olive; the skin becomes paler in the mountains and among civilised tribes, and the hair then becomes of a chestnut colour, or even of a yellowish

* Among modern authors, who have written about the Red Skins, we should mention M. Hollard (from whom we have borrowed several anthropological details), as having given the most correct descriptions of the North American Indians.

flaxen. We do not refer to the Soones, whom we have already mentioned in a note as being Albinos.

The aborigines of the Californian peninsula, who live in a scorching climate, on a stony, barren soil, are a type which has no point of resemblance with the North American tribes. A low forehead, sunken eyes, a short nose, flat at the root and wide at the base, prominent cheek bones, a rather large mouth, thick lips, a black skin, and long straight hair, with a little beard, make up a countenance which in some respects assimilates to and in some respects differs from the Ethiopian type; it gives one the idea of the stamp of an African climate on a people to whom another had already been affixed. We shall speak by and by of the moral character of the Californians, whose intellect is below that of all other Indians in the New World.

Before we explain the causes which have brought about such great differences in American types, we must be allowed some preliminary observations on the standard which regulates the variety of types. "Whenever," says Blumenbach, the creator of Anthropology, "two beings differ only in those points which may arise from the action of a determining cause, they must be of the same species; and, on the other hand, those beings who differ so essentially that the differences cannot be referred to determinate causes, are of a different species."* Other writers on the subject give definitions which are neither so clear or so correct as those of Blumenbach, and we

* Ad unam eandemque speciem pertinere dicimus animantia quodsi forma et habitu ita conveniunt ut ea in quibus differunt, degenerendo solum ortum duxisse potuerint.—*De Generis Humani Varietate Nativa*, p. 66. Gottingen, 1795.

shall therefore pass them over in silence, although they are entitled to a certain amount of consideration.

The distinct differences in varieties of a *genus* often produce so strong an impression that we are tempted to fancy these varieties to be different species, forgetting the nature of the species itself. The organic resemblance of the species is so great in the elephantine genus, the equine genus, the celine genus, and many others, that it seems impossible for any real differences to exist.

"Specific character," says M. Hollard, "proceeds from the life-springs of the species, and is essentially connected with its preservation." This is confirmed by the differences which exist in the organs more immediately conservative, and equally proved by the distinctive character of cognate species, and the illimited fecundity which attends their unions.

Thus experiments have taught us that the zebra, the hemione, the ass, and the horse, so similar in their external forms, so widely different in their colour, can produce; yet that their produce are cross-breeds that cannot perpetuate themselves. Zoology, therefore, comes to the aid of the doctrine which asserts that the fecundity which is necessary for the purposes of population is confined to individuals of the same species. It is impossible to suppose that two different species, however similar, can found a lineal descendance, since none can be more nearly allied than the ass and the hemione. Where is the line of demarcation between these two animals, of the same species and of the same country, and in whom the only perceptible difference is a black stripe on the shoulder of the one, which is not to be found on the shoulder of the other?

We read in the paper of M. Flourens, "La Quantité de

la Vie sur le Globe," that every species manifests two tendencies—a tendency to vary within certain limits, and a tendency to transmit to succeeding generations the modifications to which the first generation may have been subjected. If the variations and modifications of the first generation could not be transmitted to their descendants, they would remain individual traits, and would not be the characteristics of a race. It is because they are transmitted that they characterise a race.

The same writer observes, that external causes, such as climate, food, and habits, exert a great influence on production; because every species has an internal tendency to vary and to transmit the variations. But all these changes in nowise affect the purity of the species, nor its fecundity, since every race of the same species has the same blood and the same germs of fertility. This anthropological fact induced Buffon to say, "When men, after a lapse of ages, had traversed continents, and determined to accustom themselves to the extremes of climate, and to people the sandy south and the icy north, such marked changes ensued that the Negro, the Laplander, and the white man might have been supposed to be of different species, were we not assured that the white man, the Laplander, and the Negro, however dissimilar, could yet intermarry and propagate in common the one great family of which mankind is composed. The dissimilarity only existed externally, and therefore the changes effected by nature were merely superficial; and it is clear that all are one and the same man, blackened under the torrid zone, and tanned and stunted by the freezing temperature of the north pole." *

* Buffon, vol. iv. p. 110.

In short, says M. Flourens further on, there are superficial characteristics, and these characteristics vary; but there is a deeply seated characteristic which constitutes the unity, identity, and reality of the species, namely, continuous fecundity, and this is a characteristic which is unchangeable and never varies. In fact, races are the extreme limits to which variations of the species can reach.

Another proof that races thus varied are not different species, is to be found in the fact, that most distinguishing characteristics appear or disappear, according to the different positions in which the race may be placed; and, in the next place, because these races can engender mixed breeds. On this point nature herself can corroborate us, as some few examples will show.

We will not refer to the Angus breed of cows without horns, which, like many varieties of domestic animals brought into existence by the experiments of British breeders, are an artificial breed: but has it not been demonstrated that all our varieties of domestic pigs, of whatever height, shape, skin, or colour, spring from the wild boar, which is thickset, short on the leg, with a big head, prickly ears, armed with triangular tusks, covered with bristles increasing in length on the back, and concealing a little wool, and whose natural colour is a blackish grey? When set at liberty the domestic pig recovers the characteristics of the wild type; after the lapse of but few generations the bristles stiffen, a sort of woolly hair grows beneath them, the original colour reappears, the tusks lengthen and thicken, the skull itself, which in a domesticated state has a projecting forehead, becomes flatter, and the paws assume that massive appearance to be noticed in the wild boar. On the other hand, no race is more

variable when under the influence of man: indeed its ever-varying appearance is most remarkable.

The ass, which we obtain from Upper Asia, is there found in a wild state; it has altered in point of height, proportions, and coat, yet preserves untouched the marks which distinguish its species, and which consist in a cross, formed by a black line on the back, and a stripe across the withers and along the shoulders. Every variety of the species preserves this characteristic: a fact worthy of notice.*

That the specific characteristic should be less obvious than the acquired modifications, need create no astonishment, since the latter embrace the extreme limits to which a certain type is susceptible of being sketched; that is to say, the entire organisation. Thus animals may belong to the same species, have a common origin, and yet, without losing their specific characteristic, differ considerably, in height, in the proportions of the different parts, in the shapes which result from the relative development of certain organs, such as the brain and the skull, in the coat, and in colour.

Let us now say a few words about the characteristic differences of human types, and show that the differences which distinguish the Negro, Mongol and Caucasian types are in nowise similar to zoological characteristics, but that they belong to the order of what we have denominated in animals, acquired differences.

The characteristics which distinguish types the furthest removed as well as the most alike, are the shape of the head, the features, the proportions of the limbs, but hardly the height; the capillary system, and the colour of

* See Hollard: "De la Diversité des Types Humains."

the skin; and finally, the genius of different nations, their social state, and their manners and customs. We intend to examine these characteristics one by one.

The shape of the head offers most remarkable variations between the Negro type and the Caucasian type; and between the latter and the Mongol type. In stripping off the soft portions of the head one can better judge of the oval shape and fine proportions of the head of an European, the flatness and breadth of the head of a Mongol, the length and prognathism of the head of a Negro. This is the only way to judge of the inferiority attributed to the last-named especially, and of its asserted likeness to the higher animal species. However, M. Cubi y Soler's recent works show clearly that the system which consists in adopting the facial angle as a measurement of the development of the brain, and finding thus a greater or less gradation of the oviparous vertebræ of the European, is altogether faulty. Besides, the experiments made by the celebrated anatomist Tiedmann, prove that the space occupied by the brain in the skull of an Ethiopian, although it may vary in shape, is of the same capacity as in the head of a Caucasian.

Features, notwithstanding the innumerable differences which exist in individuals and in nations, have, it is well known, certain general characteristics, to be found in different degrees, and more or less collectively in great numbers of people. However particular temperaments exercise more or less influence on the countenance and its modifications, they are only to be considered as varieties of the same type.

Relative Proportions of the different Parts of the Body.—Anatomical researches directed towards the skeletons of the most inferior races, and those of quadrumanes who

most resemble man, prove to the satisfaction of the learned that specific differences exist which are not to be found in the proportions of human skeletons, as seen in different parts of the globe.

Capillary System.—This system, which extends to the greater part of the human body, is the same in every nation on the face of the earth: now, in mammiferæ, it differs in every species, and is constantly marked by peculiarities not observable in human types. The capillary system differs by its abundance or its scarcity on various parts of the body, especially the face; sometimes it is fine, sometimes coarse, it is smooth and curly, or crisp and woolly as a fleece, and these differences are especially to be found in the hair of the head. The colour, moreover, varies considerably. Some of the differences are of no account in estimating the characteristics of a race, such as the colour, which in all the great families of mankind is, as a rule, dark or even black; but almost all offer some exceptions to the rule—exceptions, however, being more frequent in some nations than in others. The woolliness of the hair is more of a characteristic, and is generally mentioned in descriptions, of the Ethiopian type, in connection with prognathism: yet only gradual stages intervene between this sort of hair and the straight, coarse, and to a greater or less extent, stiff hair noticeable in other nations.

When seen through a microscope, no such difference is to be found between these two sorts of hair as that which clearly distinguishes, in mammiferæ, ordinary hair from woolly hair capable of forming a nap. The characteristic of woolly hair is a peculiar shape, which causes its surface to have more or less roughness, according to its capability of cohesion. It has also been remarked that the thickness increases towards the point, not towards the root, or at

least that the lengths are unequal, and that the points do not taper. Hair, properly so called, is, on the contrary, more or less smooth, and thicker at the roots than at the points. Now, both hair and wool are to be found in the same race of mammiferæ, the one or the other predominating, according to the seasons, and especially according to the species; but hair alone is to be found in every human race, who all resemble each other in this respect, and the curly hair of the negro is of the same structure as the long and silky hair of the dark Abysinnian, and the fair Scandinavian, or the stiff and coarse hair of the Mongol. The hair of the human head only differs in respect of its quantity, its length, its fineness, and the quantity of colouring matter which it contains. As regards this last, a gradation of shades may be observed between flaxen and dark black; and of all black hair, that of the negro is most charged with this matter. It has been supposed that its tendency to curl might arise from the latter circumstance. As the same tendency is observable in many individuals of our race, it would be easy to submit this peculiarity to the test of experiment; "but," says M. Hollard, "I doubt whether their result would support the theory." *

We must be allowed to attach some importance to the perfect homogeneity of structure in human hair, since numerous facts show that every species of mammifer has different hair.

Colour of the Skin and of the Iris—That there are numerous variations in the colour of the skin of the human species is well known. They constitute one of the most striking proofs of the diversity of the nations which cover the surface of the globe, and one which has perhaps most

* De la Diversité des Types Humains.

contributed to the distinction, definition, and nomenclature of the principal races. The series of different tints comprises extreme tones, such as white, either clear or of a rosy hue, straw-coloured or coffee-coloured, yellow, olive, copper, brown, various shades of black, and intermediate hues too numerous for language to describe. Races are denominated white or black, as if those denominations were really characteristic and defined the exact limits between men of a clear complexion and those of all shades of dark complexions. This, however, would be incorrect, since the darkest man may have the same shaped head and the principal features of the white man, while great differences in those respects may exist between men of the same colour. It must not, however, be gathered from this observation, however important, that there is not a real relation between colour and distinct typical characteristics. Some human types, the prognathic nations amongst others, are always dark-coloured; while only one race exists which embraces every shade from the white of the Northern European and ebony black. The hue of the skin must find a place among the characteristics of various types, because there is a certain regularity with which it endows types; but it most certainly is not entitled to be considered a specific characteristic, as has been asserted.

Hues of all shades are apparent from the time of birth, and in some races are less liable to be affected by change of climate than in others; they are not the result of a particular organisation of the skin, as has been supposed: a layer, or rather the surface of the down, is the seat, both in man and beast, of a deposit of colouring matter. The difference between races consists in the relative quantity of this matter: black skins are covered with innu-

merable granulations, to say nothing of the cellular tissues, which also contain some portion. Finally, let us note the grand point, which is, that colour is always equally spread in all human types, and if its shades vary, the distributive system is everywhere identical. What is termed liveries do not exist; and if any portion is darker than others, and assumes a light hue in cross breeds later than others, why the same difference, only not so strong, is to be found among white races.

"Need I recall a fact," says M. Hollard, "which shows that uniformity of tints is a general characteristic of the whole human race: I mean the harmony which exists between the colour of the hair, the hue of the skin, and that of the iris. Dark-coloured races always have black hair and an iris of a dark shade; while the complexion and the colour of the hair in white races always agree: not that brown hair necessarily implies a brown skin; but at all events the tint which agrees with them is not the same as that which suits fair people, — the latter, besides, have almost always blue eyes. The exceptions to the rule arise generally from mixtures, with the exception, perhaps, of individuals with coarse hair, and of a fiery red: this variety, which must not be confounded with the fair variety shaded with red, have brown eyelashes and eyebrows, the iris of a similar colour, and a fair freckled skin. It is a remarkable fact, that in every race some individuals at least are to be found with hair of a reddish hue: it was by no means rare among the Greeks and the Jews, and also among the Caucasian tribes. Does this indicate a return to the original colour, as has been suggested? It proves, at all events, that certain tendencies are common to those races among whom it has been observed."

Negroes are said to have a wonderfully soft skin, and some persons have considered this a characteristic. The fact is, that it is by no means a general rule, many negroes having very rough skins. This softness of the integument is to be found in nations of widely different types.

Several philosophers have solved the difficulty presented by the phenomenon of different human families, by boldly proclaiming that man descends from several stocks.

This assertion, however, appears to us to be too dogmatic and too convenient to be admitted without investigation; and as the phenomena relating to types and colours are susceptible of a natural explanation, we shall now speak of the external causes which have determined the general characteristics of American savages, and made of them a type distinct from all other nations.

Climate and the social state of a nation, are the two principal causes which exercise the greatest influence on the epidermal colouring, and the physiological configuration of the human body. Changes, brought about by moral or physical causes, only become permanent after long and almost imperceptible gradations, human nature being too delicate to support with impunity sudden and violent changes. Hence a succession of trifling causes, acting continually and regularly on the same species and in the same locality, are necessary to embody the modifications in each generation, and transmit them to succeeding generations, until nature has had time to complete the work of acclimatisation.

From the pole to the equator, a gradation of colour may be observed, beginning with a sanguine complexion, becoming next pink and white, and ending at black, after

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passing through the intermediate stages of brown and olive. If any exceptions to this remark are to be found, it is because the same distance from the sun does not imply in the same region, the same temperature, nor the same climate. The temperature may be influenced in the same zone, by the mountainous nature of the country, the proximity of the sea, the nature of the soil, the state of agriculture, the currents of air, and various other circumstances. Thus it has been ascertained, that on great continents, such as America and Africa, the temperature on the western side is much milder than that on the eastern side in the same latitude.*

To imagine that God created men of different colours, because these colours are better suited to the different parts of the globe they inhabit, is far more unnatural than to suppose that He gave to human nature the power to conform to and acclimatise itself in every country in the world. Did human nature not possess, as it does, that faculty of acclimatisation, alliances between two distant nations, and colonisation of distant countries, the great emigrations of which history speaks, and scientific studies on the surface of the whole globe by individuals of the same race, would become impossible, and the great social destiny would be confined to narrow limits unworthy of its Creator. We know that on the contrary, every century has witnessed great emigrations of population, either through war or commerce, and we see that these people have not only endured the change, but become naturalised in course of time, and prospered as much as in the respective countries whence they came.

Modern writers have asserted that certain races cannot

* See Stanhope: "Essay on the Causes of the Variety of Complexion and Figure in the Human Species."

be acclimatised in certain countries; but their assertions appear to us to be inconclusive, for they are grounded on insufficient, and sometimes incorrect, *data*, and for many reasons are not worthy of the consideration awarded to them. "In the early part of this century," says M. Aubert Roche, "the English tried to take possession of Sacotoca; but sickness soon dislodged them. Ask them what the possession of Aden cost them? yet it is only situate at the opening of the Red Sea, for far upwards they dare not go. Mehemét Ali was so well aware of the influence of the climate on white men, that he sent all the turbulent Arnaut soldiers whom he wanted to get rid of, to perish on the Arabian coasts; out of 18,000, four hundred only remained alive at the expiration of ten years!"

"The earliest establishments in Canada," adds M. Louis Fleury, "date as far back as 1523; yet in 1717, the European population was less than 27,000 souls; and in the present day it does not exceed 500,000.* England has spent more than twenty millions sterling, in order to found an European establishment at Sierra Leone, and that colony has not in the present day more than one hundred white inhabitants, of whom hardly one in twenty are born on African ground. † European establishments in the West Indies, date back to the discovery of America, and after the lapse of three centuries, the white population of the West Indian Islands does not reach 300,000 souls,

* In admitting M. L. Fleury's figures to be correct, we would call his attention to the fact that no population in Europe can boast of so rapid an increase as that shown by those figures. We are not at all surprised at it, as Canada is one of the healthiest countries in the world.

† What we want to know is, not so much the sum laid out by the British Government as the number of emigrants to the colony.

amongst whom there are not perhaps one hundred tillers of the soil. *

"Algeria offers analogous examples. The Carthaginians, who were the earliest conquerors, never attempted to colonise; the Vandals remained half a century at the outside, and never tilled the soil any more than did the Turks, or the Spaniards. The Roman race is not to be traced anywhere in Algeria, despite an occupation of seven centuries. †

"Colonisation," M. Fleury proceeds to say, "is only possible on the condition that the tillage of the soil shall be abandoned to the natives, or men of the same race, and that the occupation shall be confined to a few elevated points, combining altitude with latitude. In the West Indian Islands, in Guiana, in the Brazils, in the southern portion of the United States, in the islands of Bourbon and the Mauritius, the soil is cultivated by negroes: in Java, the Philippine Islands, and in India by the natives. ‡

* This is really too bad. If M. Fleury had spent a single day in visiting the neighbourhood of the Havannah only, he would have found upwards of a hundred farmers on the right and left of the road. In the West Indies, it is the indigenous race that has disappeared almost entirely, and made way for the Europeans and Africans who have replaced them.

† Even had not the inaccuracies, referred to in our previous notes, entitled us to accept with distrust this author's assertions, we should still have the right to remark, that when the progress or the reverse of colonisation is to be taken into consideration, some allowance should be made for the effects of warfare.

‡ For the simple reason that the labour of negroes and natives is much cheaper than that of the whites; the whites' labour is more intelligent, but their number is inadequate, and planters are forced to have recourse to negroes and natives. In the southern parts of the United States the mortality among the whites is proportionably much less than among the blacks.

"In 1830, British India reckoned 100 million of inhabitants, 2016 of whom were Europeans. *

"In all those countries comprised between the two isothermal lines of 18°," says M. Boudin, "the cultivation of the soil can only be undertaken by Europeans in those regions where the altitude does away with the effects of the geographical latitude. The Spaniards, after being frightfully decimated on the Mexican coast, at Vera Cruz, at Acapulco, and at Panama, were obliged to take refuge in Mexico, Potosi, Sante-Fé de Bogota, and Quito, that is to say, on spots varying in height from 6900 to 12,000 feet." †

"Seven hundred Frenchmen established themselves in Mexico: in two years five hundred and thirty died. ‡ A few years passed in Hindostan," says M. Perier, "shorten human life by one half; men who have lived five or six years in Mozambique, are there considered as examples of longevity." §

M. Catteloup, M. Celle, and many other observers, have shown that the influences of swamps are not destroyed by acclimatisation. "Miasma cannot be treated with impunity," says M. Celle. "At New Orleans they say that nine years must elapse before one becomes entirely used to the

* The writer can only have reckoned the civilians in the Indian service, and must have altogether omitted the number of the British army, merchants, and colonists.

† The inaccuracy of this information will be seen on consulting the "History of the lengthened Domination of the Spaniards in those Regions."

‡ We doubt this fact much; the more so as the Mexican climate is one of the best in the world.

§ Were this true, Europeans could not inhabit the country. We have known British officers who have served twenty-five years in Hindostan, and who have returned to Europe in wonderfully good health.

effects of the swamps which surround that town. Miasma may be borne up against, but it is impossible to escape its effects. Those persons who live best, preserve their health the longest, *but sooner or later* they are certain to suffer." *

It would be useless to pursue our investigations on this head, as all the objections urged against acclimatisation are about as weak as those which we have quoted. We say, like M. Jacquot, cast your eyes on the map of the world, and you will find but few countries which are yet peopled by the pure descendants of autochthons: on the contrary, everywhere we see the northern races emigrating to the south and peopling it. Greece covered Italy and Asia Minor with flourishing colonies. The inhabitants of Northern Asia established themselves in all the southern parts of Europe and even in Africa; the Visigoths and Vandals occupied Betique (Andalusia) and from thence passed into Africa. Philologists and anthropologists agree in ascribing the earliest peopling of the Americas to the inhabitants of Northern Asia who must have crossed Behring's Straits.† Spaniards and Portuguese have become perfectly acclimatised in South America‡; the necessity of altitude having been exaggerated, since *savannahs*, *campos*, *llanas* and *pampas* are seldom more than from forty to sixty yards above the level of the sea. In the warm and dry portions of New Spain, Europeans enjoy good health and remarkable longevity.

The bulk of information which we possess, is therefore

* There must be many exceptions to this rule; for we have seen and known old men, both natives and strangers, who have lived in the marshy parts of Italy, the island of Sardinia, and America, and have never been subjected to the influences of swamps.

† They are far from agreeing unanimously on the subject; yet the opinion, it is true, is very generally received.

‡ This is indisputably true.

in favour of acclimatisation and justifies M. de Humboldt's expression, "man possesses a marvellous flexibility of organisation, which adapts itself to all climates."

MM. Jacquot, Joley and Martin say that to form a correct opinion on the question of acclimatisation, the essential conditions of a country must not be confounded with those accidental conditions which are easily distinguished from the others on reflection*, and which by sacrifices of men, time, and money, may be removed or at least diminished. Now the arguments brought forward by M. Boudin are all based on accidental causes, that is to say, marshy influences, clearings, poverty, fatigue, insufficient nourishment, and the neglect of all hygienic practices.

* We admit with M. Fleury that this distinction is vastly convenient, yet it is perfectly practicable. When colonists select a new country, they naturally choose a country which presents a likelihood of enabling them to promote their welfare by developing its resources: if, by chance, unhealthy swamps are to be found in the neighbourhood, their first care is to guard against their influence, or to diminish them by draining, or by hygienic observances suited to the country.

CHAP. VI.

INFLUENCE OF CLIMATE ON INDIVIDUALS. — COLORATION OF THE SKIN. — INFLUENCE OF THE SAVAGE STATE, AND OF CIVILISATION ON MAN. — THE IMMUTABILITY OF TYPES. — MODIFICATION OF TYPES. — COMMON ORIGIN OF THE HUMAN RACE. — ORIGIN OF THE AMERICANS. — ROUTES FOLLOWED BY THE RACES THAT HAVE EMIGRATED, AND THEIR DISPERSION THROUGH THE NEW WORLD. — DIVERSITY OF LANGUAGES. — INTELLECTUAL AND SOCIAL PROGRESS OF AGRICULTURAL TRIBES WHO HAVE BEEN FAVOURED BY THE NATURE OF THE COUNTRY. — CONCLUSION.

After having spoken of the possibility of foreign races becoming acclimatised, it remains for us to examine the influence of climate on individuals. The coloration of the skin is primarily attributable to the sun and to heat in general. Indeed, we perceive in the southern parts of our climate, that the face and hands of those persons who are continually exposed to the rays of the sun, assume an olive colour. We have likewise remarked in the south, that men who dig sand from the dry beds of rivers, and the Germans and Irish employed in America, in making bricks in the open air, and whose whole covering consists of a pair of drawers, have the portions of their bodies which is exposed to the air of a red similar to that of the savages in the United States.

The most ordinary experience proves the powerful effect of climate on the complexion; the heat of summer tans it, and the cold of winter gives it a ruddy colour. In temperate zones these alternate influences of heat and

cold correct each other, but when either one or the other becomes predominant, it produces, in proportion to its intensity, an effect more or less permanent, owing, in the one case, to the tension and expansion of the nerves and vital fluids; in the other, to their contraction and looseness. The skin, especially, is peculiarly effected by coming in direct contact with the atmospheric air. The colour and face of the body do not proceed from any sudden impression, but are like habits, gradually contracted, by slow and reiterated action, which affect nations as well as individuals. These habits are transmitted to succeeding generations, and become strengthened by right of prescription; it is only, however, after a long course of ages, or, at least, after a great number of years, that national physiognomy and national customs acquire a fixed, peculiar, and indelible character.

The coloration of the skin is still further heightened by the damp heat of marshes and low lands, and by the putri exhalations which abound in certain localities. Mr. Livingstone, who traversed Central Africa, from ocean to ocean, to the 18° of south latitude, observed among the numerous tribes of Negroes he visited, during his long journey, that the skin of those who lived in low and marshy lands was of a very black and shiny colour, whilst that of those who lived on *plateaux* and elevated, or dry ground, was of a brown colour, resembling the skin of the mulatto. The vapours emitted by stagnant waters, great fatigue, poverty, want of cleanliness, and nakedness, tend greatly to darken the skin.

Studies, made by the aid of the microscope, show that the colour of the skin is owing to the presence of white, black, yellow, and red globules, which are found in the cellular tissues existing between the *derme* and the *epi-*

derme; it can scarcely be credited, that so trifling and unimportant a difference could have led men of learning to conclude that the black, yellow and red races are of a different nature from the white. Would it not be more simple to refer this phenomenon to natural causes?—as to the theories of secondary causes, which produce such results, it would be too long to enter on an explanation of them; and as the reader can consult the works which treat that subject in detail, we shall confine ourselves here to quoting facts.

The Jews afford a striking instance of changes produced in the skin by climate. Springing from the same stock, and being precluded, by their laws, from intermarrying with other nations, the Jews, although dispersed over the whole face of the globe, are, in general fair and white in England and Germany; chestnut-coloured and brown in France, Italy, and Turkey; swarthy in Spain and Portugal; olive-coloured in Syria and Chaldea; and copper-coloured in Arabia and Egypt.

What has been said with reference to the change in the skin, may be equally applied to the hair, the features of the face, and every other part of the human body. The heat of the climate, like that of fire, curls and shrinks the hair, whilst humidity, on the other hand, expands and straightens it. Extreme cold contracts the nerves, and diminishes the stature in the same way that extreme heat renders it slight and weakly. The face being that part of the body which is most exposed, and which, from the earliest age, is subject to the influences of the open air, is also that part which varies most widely in different climates. A tangible proof of the influence of climate upon organised beings is to be found in the fact, that cold tends alike to stunt the growth of men and plants in Lapland as well as

Greenland, and in the land of the Esquimaux. Buffon, and several other writers of the present age, have described, in eloquent pages, the influence of climate, food, and civilisation, upon the coloration of the hair and skin. True it is, that these changes are slow; but when it is remembered that it required more than ten centuries to civilise Europe, it ought not to be a matter of surprise that it should require still further time to change the colour and physiognomy of a people.

That the savage state is calculated to increase the effect of climate, while civilisation tends to modify it, does not admit of a doubt. The savage, almost naked, and rarely protected, even by a miserable hut, is continually absorbing, through the pores of his skin, the atmospheric air and the exhalations of the earth; he is also exposed to the rays of the sun, which have upon him an influence all the more powerful, because it is direct. To these causes must be added the fatigue occasioned by his mode of existence, his food, the quality of the herbs and roots which form his ordinary diet; and, in short, the habits engendered by his wants and nature, and by the character of the country he inhabits.

Civilisation, on the contrary, tends to correct the influence of climate; comfortable abodes, sufficient clothing, wholesome and nourishing food, taken at regular hours, a well-cultivated country, and habits of cleanliness, are so many causes which tend to preserve and embellish the human species.

The physiognomy of individuals is likewise influenced by the moral state of society. Every object which impresses our senses, and every emotion which arises in our breast, affects our features, and is reflected on our countenance, as in a mirror. An insignificant face generally

indicates an insignificant character and narrow intellect in the same way that an expressive face denotes a sensitive and impressionable mind, endowed with all those noble qualities which constitute man the the lord of the creation. The aspect of a sunny and cheerful country animates the physiognomy and gives it an agreeable expression. Indeed, it not unfrequently happens that the nature and variety of the ideas are sufficient to change the expression of the face, and thus to distinguish the intelligent, educated, and civilised man from those who have remained in an uncivilised state.

The refinements of social life impart grace and ease to the body and give a mildness to the countenance, whilst, on the other hand, the rough labours of the field and the workshop render the person awkward and the features coarse. The truth of this assertion is made manifest by the fact, that we often observe as great a difference between an accomplished lady and a peasant woman, as that which exists between a European and a savage. Different nations, belonging to the same race, acquire, by their habits, their intellectual capacity, their degree of civilisation, and the climate and nature of their country, a peculiar type which distinguishes them from each other. This peculiarity of types, which is even observable among the different classes of the same nation, enables one to distinguish the position and occupation of each individual. In America, a striking instance of this difference in the physiognomy is afforded, by comparing the slaves who work in the fields with those who serve their masters indoors; the former retain their wild and African aspect, whilst the features of the latter are milder, their skin less dark, and not so coarse.

Having pointed out the causes which modify the human

species, and divide it into numerous varieties; and having shown that the human types correspond exactly by the nature of the differences that distinguish them, to the varieties, or races, which are found in a single animal species, and which are considerably multiplied by the influence of man, we shall conclude this subject by refuting, with the author of the "Diversity of Types," the objections drawn from the immutability of types by those who maintain the plurality of the human species. From what we have already said the reader will have observed, that the immutability of types is a very general law, which operates not only among those races whose differences are strongly marked; but also, and almost to an equal extent, among those races whose distinctions are less palpable. From this law of immutability, which is applicable to the smallest groups of the human family, shall we conclude that the various types of mankind are types separately created and forming distinct species? If so, let us be consistent; let us give to that law the whole meaning of which it is susceptible, and let us maintain, not only that the Negroes, the Mongolians, and the Caucasians, are different species; but also, that there exist in the midst of us several species of mankind, such as the Gaelic, the Kimric, and the Iberian species; that our Kimric Britons are not of the same species as our Gaelic Burgundians; that the Basques represent a separate species; that the Provençals, of Arles and of Marseilles, of Phocidan extraction, are of a different species from their neighbours in the Ligurian and Languedocian Provence, and from the French of the north. From such conclusions, however, we shrink, as being equally repugnant to our reason and to our feelings; and yet such are the consequences we should be compelled to accept, if we were to view the law of immu-

tability in the same light as those who maintain the plurality of the human species.

But let us not judge of these consequences, and of the theory from which they are derived, by the impressions they make on us. Let us rather inquire whether the law, which tends to preserve the permanency of types, necessarily implies that those types were originally and essentially separate.

And first, we would ask, what is the true nature of this law? It is an act of generation, by which the outward form of the parents is transmitted to their offspring, and by which the children inherit, not only the natural qualities of their parents, but also their acquired ones, which last circumstance is worthy of special notice. It is, also, by this act, that individual differences are converted into general differences, and become more permanent modifications. These are undeniable facts, borne out by experience, and the bearing of which is known to every naturalist.

Those who maintain the plurality of the human species base their conclusions solely on the fact of the immutability of types; and not only do they fail to present this fact in its true light, as being the result of a law of transmission, which embraces both natural and acquired qualities, but they seek, by the most extravagant hypotheses, to exaggerate the permanency of types; and everything which assigns a limit to that permanency, or proves that the types are susceptible of modification, is received by that school with an air of contempt and distrust. For instance, the following argument, which we quote literally, is considered as settling the question: "Men inhabiting, during a period extending in all probability beyond the age of authentic history, islands situated

in the same latitude, and placed, as regards climate, in exactly the same condition and even in the vicinity of each other, have nevertheless remained up to the present time distinct in colour. Compare these inhabitants of the Vite, Solomon, and New Hebrides islands, with the Polynesians of the Tonga, Otaïta and Nouka-hiva islands; the first are of a sooty colour, whilst their neighbours have not acquired (in all probability during three or four thousand years) the Ethiopian complexion." *

Here, then, we have two distinct races: that of the Oceanic Negroes, and that of the Polynesians, inhabiting the same part of the globe, and living under a climate of exactly the same temperature, remaining nevertheless distinct from each other. But how long have they thus existed? An answer to this question was necessary in order to justify the trouble which had been taken in going so far to ascertain a fact of which more than one example might be found at home. As this point, however, is open to every conjecture, it has been coolly assumed that the races in question have lived together during three or four thousand years. Such is the mode of reasoning, that has been termed a decisive argument. Here is another of the same kind: "Most of the European countries have witnessed the emigration of portions of their population into distinct regions; and, notwithstanding the length of time that has elapsed since some of those emigrations," says Desmoulins, "neither England, France, nor Spain ever fails to recognise in the colonists the features of the mother country." † The reason that induced the author of the above passage to extend to three or four thousand years the period during which the

* Bérard, Cours de Physiologie, tom. i. p. 457. † Ibid. tom. i. p. 461.

two principal Oceanic races have lived in the vicinity of each other, ought to have shown him the insufficiency of the example of European colonists, on account of the too recent date of their emigration. For, surely three centuries is a very short space of time in the one case, if thirty or forty are required in the other case. Facts so negative, I had almost said so insignificant, as those which I have borrowed from the arguments of M. Bérard, might be considered, in some measure, as pertinent if intended to enlighten any one who should think a change of climate sufficient to produce a complete change in a race; or who should be so far ignorant of the force with which the laws of transmission operate, as to imagine that they could undergo a thorough modification in a colony daily recruited by fresh emigrants from the mother country. In answering a person capable of entertaining such ideas, one might be justified in adducing examples of the above nature.

Of all the peculiarities by which the types and races are distinguished from each other, the most obvious are those that pertain to the colour of the skin, and which in the estimation of some ought to be considered the most important. That such should be the opinion of those who deny the unity of the human species, is to us a matter of surprise. For the colour of the skin is of all peculiarities that which is most independent of any other. Not only does the colour of those races that are naturally dark vary considerably, but complexions more or less dark are to be found in every type, and acquire among some of the inhabitants of our own country as deep a hue as is observable anywhere else. It will be remembered that there exist among the Abyssinian Semites perfectly black, and among the Indians Arian tribes who unite European fea-

tures with most decidedly African complexions. It will also be remembered that among the same race the hair and skin are dark in low plains, and become fair in elevated regions. Such is the case with Hindoos of the Himalaya, the Arabs of the Yemen mountains, and with the Berbers of Mount Aures, in the regency of Tunis. In order to explain the presence of these men with fair complexion and light hair in the midst of Kabyle tribes, it has been presumed that the Berbers of Aures are descendants of the Vandals. But this is a mere supposition, an hypothesis of which those who maintain that a race cannot lose their colour eagerly avail themselves.* Admitting, however, that the Kabyles are of Vandal origin, that is to say, that they belong to the Indo-Germanic race, I would still ask, how comes it that they have retained their fair complexion, light hair, and blue eyes, whilst in the towns of Germany, those of Denmark, and in the plains of Switzerland, from the canton of Soleure to the Lake of Constance, black hair and eyes are so common? Unless our adversaries are prepared to deny the most evident facts, they cannot affirm that the Indo-Germanic race has everywhere retained all the original characteristics of its type. Every tourist who has travelled through the Bernese Oberland must have remarked the striking difference which exists between the inhabitants of the valleys and those of the mountain villages. Both in Lower Hasli and in Interlaken I have often met with the swarthy complexion and black hair of the Ligurian race, whilst at a few leagues' distance the population of Upper Hasli is usually fair, as is in general the case with the inhabitants of the Swiss Alps.

* When told that this is but an hypothesis, "What matters?" they quietly reply, and then proceed to draw conclusions from that very hypothesis.

These local differences serve to show the close connection that exists between the altitude of a country and the physical character of its inhabitants, and the possibility of that character being thereby modified.

The connection between the colour of the skin and the latitude of a country is no less evident. It is in the torrid zone that we meet with the darkest complexions, which become gradually lighter in proportion as we proceed towards the poles. Despite, however, the obviousness of these coincidences, there are not wanting those who insist on maintaining, that in the human races colour is an inherent quality in no way affected by the influence of the sun, or if so, to a very limited extent, such as slightly tanning the complexion of country people, or adding a shade or two to a complexion naturally inclined to some particular colour. But these persons, who so boldly and so contemptuously deny the colouring influence of the sun, forget that nations belonging to the Syro-Arabian race have become quite black under the climate of Abyssinia, —that the Hottentots when closely examined are found to be merely Negroes, whose complexions have been made light by inhabiting the elevated plateaux of Southern Africa. They prefer dwelling on the fact, that to the north of the tropic of Cancer, and even in the polar regions, there exist races more deeply coloured than the inhabitants of our own country; and as examples of this they instance in Asia all the nations belonging to the Mongolian race, and having, among other peculiarities, a complexion of a brownish yellow; in Europe the Laplanders, who belong to the same type, and have a sooty complexion; in North America, the numerous tribes designated by the name of Red Skins.

These examples, on the strength of which it has been

sought to diminish the importance of the action of the sun in colouring the skin, can only have weight with those who take a narrow and exclusive view of that action, by considering it as the sole cause of colour, and by omitting to take into account the circumstances which are favourable or unfavourable to its influence. But it is precisely those who maintain that colour is an inherent quality in the human races, who fall into the error of taking this exclusive view. Because the brownish colour of the Laplander cannot be ascribed to the excessive heat of the sun, it has been inferred that they must always have been of that colour. Unfortunately for this conclusion, it is now known that if the Laplanders have a sooty complexion, they do not inherit it any more than their short stature from their ancestors, the Laps; and we have no reason for believing that the latter differed in colour from the other members of the Ouralian family—the family to which also belonged the Finns, who were the progenitors of the fair Finlanders.

Wherever beyond the equatorial latitude the state of the climate is such as to subject man to the alternate influence of a very hot or a very cold temperature, we may expect to find that the skin has been affected by those influences—the opposite nature of which in no way lessens the strong effect they are calculated to produce. Indeed, the extreme temperatures exercise proportionably a greater influence on nations who most nearly approach a state of nature.

In order to explain the different colours, the various types, and the medley of races in America, and in the islands scattered over the face of the globe, and to account for the phenomena, combination, and caprices of nature, there is no need to have recourse to obscure and intricate theories, full of strange novelties and trans-

parent sophisms. Such theories are the offspring of a mind baffled in its attempts to comprehend the mysteries of Providence, and biassed by foregone conclusions and prejudices against religion. Or, again, they may be the result of a superficial knowledge of the matter in question, or a real ignorance of the facts that condemn a system too inconsiderately adopted. And as the light which history throws upon the question is insufficient to dispel every obscurity, there are some who, rather than admit the truth of the Mosaic account, content themselves with the imperfect knowledge afforded by conjectures.

In considering the objections urged against the biblical cosmogony, we were much struck by their weakness and inadequacy, especially when contrasted with the theories and arguments opposed to them. In concluding his work on the human races, M. Hollard, whom we always quote with pleasure on account of the correctness of his observations, says :— "Some naturalists have thought to refute the system which ascribes a common origin to mankind, by drawing a fanciful analogy between the distribution of the principal human types over particular regions of the earth, and the geographical distribution of the animal and vegetable kingdom into local systems, implying the existence of several central regions around which the various races of animals and different kinds of plants are grouped, and in which they were originally created."

Some ethnologists are of opinion that the dispersion of mankind was too extensive, especially when viewed with reference to those countries most remote from the continent of Asia, to admit of the belief that the world was peopled by means of emigration.

Again, there are some who think it more in accordance with the principles of physiology to consider the human races as having been especially created for the climates

they inhabit, than to admit the possibility of their acclimatisation in regions differing so widely as Siberia and Central Africa. A few words will suffice to appreciate these three opinions, equally opposed to the unity of race.

That the existence of the animal races should be limited to particular regions—a fact which shows that they, as well as plants, have been separately created in different parts of the earth — is perfectly natural, for they consist of species essentially distinct. The animal kingdom is everywhere spread over the earth, although its particular species are only found in certain regions, and even the classes which are most numerous can hardly be said to exist in every country. On the contrary, the domain, not only of mankind in general, but of every species of the human race, extends over the whole surface of the globe, when we cease to view those species as originally distinct; and, indeed, it would be no easy matter to state the exact number of the regions supposed to have witnessed the creation of their respective races, and to assign to them precise limits.

But is it absolutely necessary to assume the existence of several primitive centres of population in order to explain the presence of man in every quarter of the globe during a period more or less extended? Were there any fact clearly establishing, or even affording a probability, that the regions of the earth now inhabited have been, in each case, inhabited during an equal length of time, the supposition in question would be well grounded, and, indeed, could alone account for such a uniformity. But, whatever the real antiquity of the civilisation of some nations may be, and however long they may have existed, tradition affords far more reason for believing that the human race spread itself over the earth by successive

emigration, than for believing that the earth was simultaneously peopled; for man appears everywhere to have led a nomadic life prior to settling down in fixed localities. It was from the depths of Asia that successive waves of barbarous tribes swept over the Roman empire, and bore the Vandals onwards to the shores of Africa. The more recent emigrations of modern Europe have carried to every part of the earth races destined to change the population of their adopted countries, and to give them an importance which they have not hitherto enjoyed; and can we, in the face of these facts, refuse to believe in the account given in the Bible, which represents mankind as proceeding, like the rays of the sun, from a single centre, which it assigns as the birthplace of all the human races? There are too many instances of emigrations into unknown and distant lands, and the love of roving is too strong among mankind, to admit of our hesitating for a moment to believe that the descendants of Noah may have travelled round the globe, and covered the New World and the islands of the Pacific, after having peopled the continent of Asia by traversing the route to India, and the continent of Africa, by proceeding along the valley of the Nile.

Before our time, and indeed before anthropological studies were thought of, the Bible proclaimed the truth of the unity of the human race, a truth which in the present day is recognised by science, although it has met with many opponents. The monotheistical cosmogony of the Bible, which is so clear, so plain, so consistent, and reconciles notions of harmony and progress with the undeniable results derived from natural science, stands out in striking contrast with the cosmogony of heathen antiquity; so likewise does the sublime and

simple doctrine of Holy Writ, which makes of man the last and greatest of the created, a privileged chief of the created world, and not the first animals, refute the erroneous dogmas of some religions and of heathen philosophers respecting the nature, the origin, and the destiny of man.

We shall now recapitulate what we have said in the preceding chapters, prefacing our remarks, by reminding the reader that both the accidental and the natural characteristics of the Indian type in North America, such as the colour of the skin, the shape of the cranium, and the structure of the bones, bear a closer analogy to those of the oriental Asiatics than to any other nation inhabiting the earth. These Indians belong, like ourselves, to the great human family created by God in Eden. Notwithstanding the details we have given concerning the early emigrations of the nations of antiquity from one hemisphere to the other, we are ignorant of the precise date at which they took place. The great route principally traversed is that which joins Asia and America, at Behring's Straits, or else the two lines of islands, the Kouriles, situated between Japan and Kamschatka, and the Aleeutines, which join Kamschatka to the Alascan peninsula in Russian America, near the 55° lat. north. These communications afforded greater facilities than those which existed between the Malay colonies and the intertropical islands of the Pacific; and yet it is certain that the Sandwich and Otahiti islands were peopled by the Malays, who crossed over from their colonies in canoes. Other emigrants came from the east, proceeding along the north of Europe, through Ireland, Iceland, and Greenland; others, again, reached Central America by the Canary Islands, availing themselves of trade winds and strong submarine currents.

When these various populations had increased to an extent which rendered the natural productions of the country insufficient to supply their wants, they wandered over the American continent in different directions, until they came to countries where the climate and the natural and artificial resources were such as to present a wide field for their energies, and afford a hope of their becoming a prosperous and thriving nation; and this will account for the fact that Mexico, Peru, and the valley of the Mississippi were the most densely peopled regions of the New World.

The various communities resulting from this dispersion took up different courses of life, according to the nature of the soil, and the configuration and climate of the country. Some lived by hunting, others raised cattle, and again others devoted themselves to agricultural pursuits. These different modes of life influenced to a considerable extent the physical character and the colour of the skin in the different tribes. Those who inhabited hot and dry countries retained their primitive type, whilst those who lived in lands where the heat was tempered by dampness, acquired an olive-coloured or bronzed complexion. The organisation, however, of the tribes inhabiting the icy regions underwent very little change.

It is to be regretted that the study of Indian philology should as yet have thrown no important light upon the origin of the Indians. There exist, however, tabular comparisons of the Indian and Asiatic languages, drawn up by the Santini and Messrs. Barton and Abernethy, and which are deserving of notice; as also the calendars of the Aztecs, the Calmucks and the Tartars, which in the months are designated by the names of animals, nearly similar in each case. The analogy which exists between

the Mexican calendar and those of the nations of Tartar origin, is shown by M. de Humboldt in the following table: —

Tartar Zodiac, Mantchouc.	*Mexican Zodiac.*
Tiger,	Tiger,
Hare,	Hare, rabbit,
Serpent,	Serpent,
Monkey,	Monkey,
Dog,	Dog,
Bird, fowl.	Bird, eagle.

That the signs of the Tartar zodiac should be found also in the Mexican calendar, is a fact, says M. de Humboldt, sufficient to prove that the nations of these two continents drew their notions of astrology from a common source. If we examine, says the P. de Sonet, the works written at the commencement of the conquest by Spanish and Indian authors, we shall find that in Mexico such names as tiger, dog, monkey or rabbit, have been given to the days of the week since the seventh century. These names are applied in the same manner throughout Eastern Asia; and even the date of the year is designated by a word signifying the same thing in the Thibetan, Tartar, Mantchoux, Mongolian, Chinese, Japanese, and Courland idioms; and also in the Tonquin and Cochin-Chinese languages. But we find in the Tartar and Mexican zodiacs not only animals adapted to the climates which those nations inhabit, but also tigers and monkeys — species of animals unknown on the plateaux of Central and Eastern Asia, where the temperature, owing to the land being elevated, is colder than that which exists in the same latitude towards the west. The Thibetans, Mongolians, Mantchoux, and Calmucks, must therefore have received from a country lying further south the zodiac

to which the too exclusive epithet of tritarian cycle has been applied.

The ancestors of the Mexicans in emigration proceeded towards the south; and, as in the northern countries from whence they came, there exist neither tigers nor monkeys, the signs of *Ogomatli* and *Ocelot* afford a strong presumption that the zodiacs of the Toltecs, Aztecs, Mongolians, Thibetans, and of many other nations now widely separated, were originally invented in the same part of Asia.

The American idioms, although composed of dissimilar words, are in grammatical construction almost identical. This difference in the words must have existed prior to the peopling of America — a supposition which agrees with the opinion, that that continent was peopled by a few nations only; whilst the contrary supposition would lead to the conclusion, that the first inhabitants of the New World belonged to hundreds of distinct nations — which is inadmissible. Although this minute subdivision of languages affords no clue to the date of the first emigrations, it nevertheless proves that that date is exceedingly remote. For, admitting the facility with which modifications are introduced into unwritten idioms spoken by barbarous tribes, whether occupied in hunting or in tending flocks, and who disperse in proportion as their population increases, the fact nevertheless remains, that a considerable time is necessary to effect a radical and complete change in a language.

In order, however, to trace the origin of those nations which inhabited America when discovered by Christopher Columbus, and to account for others whose former existence is attested by numerous and ancient monuments found in that continent, we need not ascribe to them a fabulous antiquity; that is to say, we need not have re-

course to the supposition that America was peopled from the beginning of the world. M. Albert Galatin shows us the rapidity with which the human race increases and multiplies when it possesses sufficient means of sustenance. "It should be remembered," says that learned writer, "that for every ten times that a population doubles itself, it increases as one to more than a thousand — and for every twenty times as one to more than a million." And if a population were to increase in the proportion of one to two for a period of twenty years, and to continue to increase at that rate during twenty-five successive periods, the existing posterity of six persons would amount at the end of five hundred years to nearly two millions of souls.

The population of America, as that of every other part of the world, would be far greater at the present time, had the produce of agriculture always increased in a proportion commensurate to the wants of mankind. Making allowance for the want of tools — an aversion to the labours of the field, and for all the causes which tend to render a people indolent and improvident, and to check its physical and moral growth, it can readily be imagined that the few tribes who are supposed to have emigrated to America, in the fifth or sixth century after the Flood, may have been sufficient to people by their descendants the whole of the New World.

In order to trace the origin of the civilisation of the Peruvians and Mexicans, and of the semi-civilisation of the tribes inhabiting the Pueblos of New Mexico; and to account for the comparative state of barbarism in which the tribes of Eastern America exist, and also the brutish condition of the Californian tribes, and in general of all those who inhabit the northern shores of the Pacific; we need only examine the history of mankind in that

which constitutes its characteristic feature — namely, the development of man's intellect.

We have seen that the intellectual disparity between the human races is not owing to any inherent vice in their physical organisation, for no being can engender others of the same species without imparting to them the attributes of his own nature. When, therefore, this disparity exists, it is merely accidental, and only becomes an essential characteristic of the type in cases where those peculiarities, resulting from external causes, have been transmitted during a period sufficiently long to take root, as it were, in the race. The first generations of mankind, left to themselves, were ignorant of the arts and sciences: and it was only after the lapse of ages that they attained their present degree of civilisation, by successively accumulating stores of knowledge — by gradually developing their intellectual faculties — by availing themselves of the resources of nature in satisfying their newly acquired wants (often created by the position of the country they inhabited), — and by becoming conscious of their superiority over all other created beings.

If it were possible to study minutely the history of the intellectual progress of nations, we should, no doubt, be able to assign the approximative date of the first emigrations to America, and to ascertain the origin of the Indians who inhabit that continent, by comparing the more or less barbarous state of tribes who have emigrated, with the state of the nations to which they originally belonged. The archæological discoveries recently made in every part of America, would furnish valuable data for such a study, and serve as landmarks to guide savants in their scientific researches. These discoveries show that the first emigrations to America took place at a

NATURAL CYLINDERS.

period when the mother country was scarcely more civilised than the Indians of the present day. Unfortunately, the information we have concerning the Asiatic populations is very imperfect. To the extreme east of Asia there exist tribes as uncivilised as those of America; but the want of information, above alluded to, precludes us from availing ourselves of this fact, in order to establish a positive conclusion.

A country rich in the beauties of nature,—possessing a mild climate and a fertile soil,—abounding in natural resources, influences the moral character of its inhabitants to a considerable extent, by diminishing their physical wants and the labour necessary to supply them, and by leaving more leisure and more strength for the development of their intellectual faculties. Indeed, the effects of this natural progress are strikingly observable among the Mexicans and Peruvians.

In the fifteenth century the Americans only cultivated maize and a few other indigenous plants. If civilisation came from Europe or Asia, the cultivation of corn, such as wheat, barley, rice, linseed, &c., would have been introduced with it; as well as the art of forging iron, and the use of those tools employed wherever there exist populous and civilised communities. In astronomy, the Mexicans reckon time in a fashion peculiar to themselves, and which has no connexion with the revolutions of the moon, or the apparent annual rotation of the sun. Later they discovered the solar year of 360 days, then of 365, and, finally, of 365 and a fractional part. That they should have observed the passage of the sun in the zenith of Mexico, shows us that such observations could only have been made originally in countries situated between the tropics.

It is rather curious that the Mexicans, who were undoubtedly of Asiatic origin, should not have brought their civilisation from the mother country, which was yet in a barbarous state, and that their civilisation should be peculiarly their own. The tribes in the remainder of America, less favoured and not addicted to agriculture, never attained the same degree of social and intellectual development as those who occupied themselves in agricultural pursuits. Too indolent to work, they subsisted on the natural products of the country by hunting, fishing and on roots. M. Albert Galatin says, with reference to this: 12,000 square kilometres of cultivated ground might maintain a million of men, whereas the same space uncultivated would hardly maintain 10,000.*

We conclude, therefore, by repeating that it is useless to have recourse to the supposition of a separate creation in America, a fresh Divine interposition, or any other extraordinary theory, in order to arrive at the origin either of animals or Indians, or to understand their differences, the kingdoms which have disappeared, their antiquity, their civilisation, or the variety of American languages. We must admit that the Indians of the present day are the degenerate descendants of emigrants from the Old World, who at successive and very remote periods came over to America, voluntarily or accidentally, either in family groups or separately. Our belief is that of the most eminent of the learned who have treated this subject: the divers theories which are opposed to it, let us add, are based on gratuitous and arbitrary suppositions, on local, superficial, and insufficient data, and on prejudices which science cannot recognise.

* Transactions of the American Ethnological Society. New York, 1845.

PART III.

DESCRIPTIONS.

CHAP. VII.

DIVISIONS OF NORTH AMERICA. — NORTHERN PRAIRIES OF TEXAS. — FIRST DESERTS OF THE SOUTH.—REPTILES AND INSECTS.—THE RED RIVER OF TEXAS.—LAKES.—CROSS-TIMBER.—WITCHITA MOUNTAINS.—ANECDOTES.—SAND HILLS.—CAÑONS.—SOURCE OF THE RED RIVER.—MIRAGE.—THE PRAIRIE DOGS.—SOURCE OF THE KI-CHI-È-QUI-HO-NO.—THE LLANO-ESTACADO.—ASPECT OF THE SOLITUDES ON A SUMMER'S NIGHT.

THE Indians, surnamed the Red Skins of the United States, have been perfectly described to us by the missionaries of last century, in Fenimore Cooper's novels, and the learned writings of many American authors; but these almost annihilated tribes are now more worthy the historian's sympathetic pity than the attention of the modern writer, for the Anglo-Saxons have shrouded them in the wretchedness of a factitious civilisation, which renders these savages repulsive, both in a physical and in a moral point of view.

The primitive type of the Indian is only to be found in the great deserts; that is to say, far from whisky, from the small-pox, and from the American plantations. It is in those deep solitudes comprised between Texas, on the south, the valley of the Mississippi, on the east, the British possessions, on the north, and the Pacific Ocean, on the

west, that you should go to study the Indians. It is there that they are to be seen in their primordial character, with their native faculties and their original habits; in the midst of scenery that is at the same time grand, gloomy, and poetic, the stamp of which, in the desert, becomes deeply impressed on man and things.

To describe, step by step, those vast solitudes, which are, nevertheless, inhabited by myriads of men of divers colours, of strange customs, of singular habits, so different from what we usually see; where nature changes its aspect at every moment, and where extraordinary phenomena strike the traveller either with admiration or with awe,—would be an undertaking quite as toilsome and painfully fatiguing as are the long journeys across boundless prairies, or amidst mountains of overwhelming magnitude. It is then with a rapid glance that we shall go over those immense wilds, only stopping at a few exceptional sites, worthy of occupying our attention on account of their original details.

The central part of North America is divided into two very distinct zones. The one to the east is covered with thick forests, which extend almost without interruption from the Atlantic to the valley of the Mississippi, and even to a distance of 300 miles beyond that river. On all this surface, you seldom meet with the great clearings called *glades*, save in a few valleys of the principal chain of the Alleghany Mountains and in Kentucky. The forests then make way for the prairies, which, beginning in Texas, ascend from south to north to the hyperborean regions, and are afterwards lost to the west in the waters of the Pacific Ocean. It is this zone, divided in all its length by the range of the Rocky Mountains and of the Sierra Nevada, that is the least known, although it is the most

curious and interesting of the New World. It is of this part of America that we shall especially treat.

We have already spoken of Texas in our "Missionary Adventures in Texas and Mexico;" so that we will now only say a few words about its northern part, where the deserts begin. It is known that this new state of the American Union extends towards the Gulf of Mexico, in sandy and swampy plains, which, as they ascend northward, become elevated, fertile, and wavy, and are clothed with rich pasturage, on which graze numerous herds of cattle, sheep, and horses. The mountains only appear in the north and north-west, near the Red River, the Llano-Estacado, and New Mexico.

The prairies are cut up by countless rivers and streams, which are skirted by a double border of forests composed of cedars, magnolias, sycamores, plane-trees, ebony, mesquites, tulip-trees, maples, pines, besides many varieties of acacias, oaks, and other trees indigenous to hot climates. The prairies of Texas resemble those of the other great American deserts, yet they are less undulating but more fertile. I have traversed some of them that were sixty miles in length; they appeared to me like an ocean of dark stunted herbs, in which not a single brush or bramble obstructed the view, where nothing marked a beginning or an end, and where all was mute and motionless. It would be in vain to seek for beauty in this nature, which is no doubt grand, but possessed of the wild and melancholy character of the desert. The soul is filled with the immensity of the picture, as on the ocean; but the sea has, at least, the wind and waves to give it animation; whereas, in these solitudes there reigns a dismal silence, gloomy

and sad like that of the tomb, which fills the heart with a darksome and distressing uneasiness in this void resembling chaos.

One journeys on wearily through these wildernesses for days together, without hearing the warble of the birds, without seeing anything but the yellow grass, flowers faded by the heat, deer lying carelessly about, and pricking up their ears as they look at you with astonishment; time-blanched bones, some rare tumuli, or sepulchral mounds, gilded by the last rays of the setting sun, or drowned in the bluish vapours of the atmosphere. Such are the sole monuments, the only traces of man's sojourn in these solitudes.

To the west of Texas, between Lavaca and Victoria, between the Rio Seco and the Rio Blanco, are to be seen two plains, with slight undulations going from east to west; the ridges of the ground resemble, so as to deceive the beholder, the little waves caused by the ebb and flow of the tide,—they are long, soft, and even. Here and there, at long intervals, mesquites, with their gnarled branches, display their dark green foliage; a few clusters of acacias, too, are scattered in a most capricious way about this plain, and appear like motionless shadows bending over a petrified sea covered with algæ.

These regions are most remarkably fertile; grass and flowers grow there in vigorous profusion; and partridge, quail, wild turkeys, and deer, have made of this spot their favourite sojourn. On the other hand, rattle-snakes, scorpions, and tarantulas swarm there. They are continually to be seen in the plains, in the woods, on the borders of the rivers, in fact, everywhere. It is impossible to form an idea of the quantity and variety of noxious reptiles and insects that multiply in the north

and north-west of Texas. One day as I was walking beside my cabin, reading my breviary, I crushed, without being aware of it, the back of a serpent that lay in my way. If venomous reptiles and insects were to attack man in those countries, the history of the deserts would be but a long martyrology; happily it is not so, for, owing to the heat of the climate, the movements of these animals are very slow. You can judge of this fact by the following instance:—A young savage, who was travelling on foot in the prairie of the Leona, stopped under a tree to rest himself. In seeking a commodious spot, he stepped inadvertently on the tail of a rattlesnake that lay concealed under the grass. The reptile at once raised his head, and was on the point of darting his fangs into the imprudent youth, when the latter, without losing his self-possession in presence of the danger that menaced him, and from which he had not time to flee, instantly took out his knife, and let it fall perpendicularly on the serpent's head, which was pierced through and through.

But the greatest annoyance to travellers crossing these solitudes is the tick, a species of bug peculiar to the prairies. This insect, whose numbers are prodigious, creeps under your clothes, clings to your skin, nestles itself in your flesh, sucks your blood, torments you with an incessant itching, and can only be torn from the body with the greatest difficulty. I have often counted to the number of fifty of these insects that took up their abode on my legs, during an encampment of one or two hours.

Another torment, inseparable from long journeys in the prairies and great deserts, is the want of water. The streams and rivers in those regions are generally so distant from each other, that the traveller is often without the

means of quenching his thirst for days together. Thirst exhausts animals, and renders them useless, much sooner than it overpowers men; nevertheless, the latter suffer terribly from this great privation of water: sometimes they fall victims to the heat before their throats, contracted by the ardour of the sun, can get refreshed with a cool liquid. I have seen in the woods the withered skeletons of unfortunate white people, who died from thirst near a spring or a pool of water, that they fancied was yet a long way off, or to which they had not strength to crawl. I have often been obliged to stretch myself on the grass to moisten my burning lips, by sucking the tiny drops that the night-dew produced on the green-sward of the solitudes.

Without speaking of ferocious animals, there is another danger which continually hangs over the traveller's head in the northern part of Texas: it is the arrow and the lance of the Comanches. These savages have been so ill treated by the Americans, since the annexation of Texas to the United States in 1850, that they meditate nothing but vengeance against the white faces. The number of victims who fall every year in this state by the Indians' weapons is so considerable, that no one dares to trust himself alone in those deserts.

The Red River and the lofty table-land of the Llano-Estacado form the northern boundaries of Texas, and divide it into portions of Louisiana, of Arkansas, of the Chickassas and Chactas territory, and of New Mexico. Before 1852, no one had yet gone over these vast countries for a scientific purpose, so that the only information obtained about them was derived from a few ignorant savages, and from half-civilised merchants who traded with the neighbouring tribes of New Mexico.

In this latitude, where argillaceous earth, sand, and ferruginous deposits give the different waters a reddish tincture, it is not surprising to find that many rivers bear the same name, derived from the appearance of their waters. The Mexicans and Indians of Texas and of New Mexico generally give the name of Rio Colorado to all rivers whose waters are of a reddish yellow; the Canadian and all other rivers and creeks of Texas and of the New World have received this appellation, which accounts for the mistake made by Baron de Humboldt, Colonel Long, and Lieutenant Pike, in their topography of the sources of the Red River.

At the beginning of the nineteenth century, the French Government sent out experienced officers for the purpose of exploring the Red River, but they did not extend their explorations beyond the country occupied by the Natchitoches of Louisiana. Three years after the cession of Louisiana to the United States was made by the First Consul, a new expedition was organised, the object of which was to ascend the Red River to its very sources. The command was confided to Captain Sparks, who was accompanied by Lieutenant Humphry, Mr. Freeman, and Dr. Custis. But the expedition having left Natchez on the 3rd of May, 1806, met with so many trying difficulties that, shortly after, it was totally abandoned. The one commanded by Lieutenant Pike, in the same year, was not more successful; so that the honour of this discovery is awarded to Captain Randolph Marcy, who verified the geographical position of the source of the Red River, whilst he was making scientific explorations in 1852, by order of the Government of the United States.

From its sources as far as Fulton, in Arkansas, the Red River always directs its course from west to east, then it

descends abruptly from north to south until it reaches its mouth in the Mississippi, towards the 31° north lat., and the 91° 50′ west long.; its total length being 2,100 miles. With the exception of the Witchita Mountains, the entire country through which this river passes is but a spacious plain, interspersed with a few insignificant hillocks. For about 510 miles westward this plain is very arid, and almost denuded. Periodical droughts render agriculture quite impracticable in this district, unless a system of irrigation, the expense of which would be very great, could be invented. The Red River continually flows over a bed of fine moving sand, which renders it very dangerous to ford, particularly for carriages. It traverses the largest bed of bituminous coal and anthracite that is probably to be found in the globe. This stratum commences at the 28° 4′ 51′ north lat., and extends as far as the 43°, covering almost all the extent of the region comprised between the 94° 30′ west long. to the 109°. Its boundaries are the Rio Grande and the Brazos in Texas on the south, Fort Smith in Arkansas on the east, the Nabraska on the north, and the Navajos's country in New Mexico on the west, thus extending 1,100 miles from north to south, and 670 miles from east to west.

Before entering the great prairies of the south-east, the Red River passes through a wood called Cross-Timber; it is an alluvial soil of most remarkable fertility, on which grow trees of gigantic dimensions. This valley becomes bifurcated in Texas; its width varies from six to thirty miles, and it is 400 miles in length. It seems like a transition between the civilised and fertile countries, and the deserts which only contain wandering tribes. All this territory is frequented by the Comanches and

the Kioways, who take their mules and horses to graze there.

From Jefferson, a little above Fulton, almost to the Mississippi, may be seen a succession of long narrow lakes, which stretch out along the banks of the Red River. These lakes, like the *resacas* of the Rio Grande, have, doubtless, been produced by the ravages caused by the Red River, whilst changing beds at the epoch of the inundations. These inundations are periodical; they take place in winter, and about the months of May or June. The region of the lakes is lonely, but full of charms. Each of these sheets of water is begirt with a broad belt of grass, dotted with flowers of rainbow colours. Trees loaded with nests, similar in form to small conches, of azure tint, wherein birds have deposited eggs of a golden yellow, are majestically reflected in these vast mirrors of the creation. Butterflies of emerald and topaz hues adorn the blooming bush. Beetles, with breasts of sapphire, humming-birds, and colibris, balance themselves carelessly, rocked by the breath of the breeze over the bosom of flowers that are tinted like the most lovely rays of the setting sun. Chinese lilacs (*Syringa Chinensis*) bend over long lines of rose-bushes, which diffuse delicious perfumes; whilst the widow-bird and the dove send forth their plaintive notes from amongst the trees, and the mocking-bird whistles its eccentric song. Their sweet strains, sad and harmoniously lost in the silence of the desert, reached my ears like the last sighs of a dying virgin, and filled my heart with profound melancholy. In those great solitudes everything makes a deep impression on man, and strikes him with awe; he could not remain indifferent in presence of the glorious spectacles which Nature in her inexhaustible magnificence has placed before him. Unless

he be low-minded or stupidly devoid of taste, he must either weep or admire; he must leave, in thought, on the borders of the road a fragment of himself, or else he is an incomplete being, who ought not to profane by his presence these places where the Creator is so nigh to His poor creatures.

Three miles below the junction of the two branches of the Red River which unite on the west of Cross-Timber, and on the south-east of the Witchita Mountains, is to be seen a cotton-tree, growing naturally on a sandy hillock situated fifty feet from the river; this tree is marked with the following inscription, facing the four cardinal points: —

"To the south: Texas, 100° west long.
To the east: Meridian, 100° 0′ 45″ west long., 34° 34′ 06″ north lat.
To the north: The Chactas's Nation.
To the west: Captain R. B. Marcy, May 29th, 1852."

In this spot the Red River is more than 600 yards in width, and its depth is not quite five feet. On one side may be descried the Witchita Mountains, the blue outlines of which are delineated on the horizon. On the other, in the delta formed by the two arms of the river, are sandy hills of great elevation, which can be perceived at a considerable distance. The soil in this district is a succession of undulating and very sandy prairies, in consequence of which they are quite barren; but the borders of the rivers and streams are generally thinly wooded. The most common trees there are the cotton-tree (*Populus angulata*), the elm (*Almus Americana*), the oak (*Quercus macrocarpa*), and a few fruit bushes, such as the currant-tree, the raspberry-bush, the wild plum-tree (*Prunus chicasa*), &c.

The Witchita Mountains are singularly picturesque and beautiful; composed of granite of different degrees of hardness, and of manifold colours, they rise abruptly from a level plain to a height varying from 650 to 700 feet. Many of these mountains are isolated, and bear a resemblance to truncated cones; others, on the contrary, are grouped and joined together, though still retaining their circular form. At a distance their surface seems as if polished, but, near, they represent huge masses of rocks confusedly heaped one above the other. Nevertheless in some places the granite has preserved its primitive position. Red porphyry and pieces of felspar of the same colour are to be found there in abundance. All these rocks are interveined with greenstone and quartz, the latter being generally coloured with oxide of iron. The declivities of the mountains are frequently cut up by huge precipices, which are covered with wall-plants. The plains from the middle of which these mountains ascend, possess numerous and most magnificent specimens of chalcedony, jasper, and agate. The sources that spring from the bosom of the rocks, or from the greensward, are limpid, and the water has a strong taste of alkaline.

Matted grass, at least ten or twelve feet long, clothes the soil of the valleys, which are shaded by black chestnut-trees, ash-trees, cotton-trees, oaks, Chinese lilacs, mesquites, and willows. Buffaloes, panthers, antelopes, roebucks, otters, beavers, turkeys, grouse, quail, partridges, and mocking-birds, live quietly together in those solitudes. Formerly, at the foot of the mountains, were many villages belonging to the Witchita Indians, who cultivated maize; but since 1850 they have abandoned their villages and spread themselves over the prairies, probably on account

of the incursions made by the Comanches. Yet it must have been delightful to dwell in this region, where the air is as pure and sweet as the kiss of a child, the climate deliciously mild, and the sky ever blue as an Oriental sapphire; a gentle breeze, too, in sweeping over the calyx of flowers, continually embalms the atmosphere with their fragrance; the cedars and Chinese lilacs exhale sweet perfumes; and the colibri, the blue bird, and the cardinal flutter from branch to branch; large nests are built by birds of prey on the summit of the rocks or in the hollows of dried-up quagmires; tortoises crawl solitarily to the soft murmuring brook; wormwood, amaranthus, and purple flowers, blocks of red granite from which ivy hangs, are visible under the verdant oaks; whilst light flocculent clouds hover above the tops of motionless trees —charming scenes, which captivate the human soul, at the same time that they plunge it into a deep reverie. The Chactas, to whom those mountains belong, never venture there; they fear the Comanches, and prefer cultivating in peace their ground within the plains rather than have to encounter these wandering tribes, whom they despise even more than they fear. In the neighbouring prairies are to be seen a great many cylindrical elevations, from thirty to one hundred yards in circumference, and of the same formation as the mountains. To the western extremity of the Witchitas, two of these cylinders are fluted into spirals; they are thirty feet in height, and forty-five in circumference. One can scarcely explain by what process nature rears and moulds such huge blocks of granite.

All this desert, as far as the source of the Red River, is literally furrowed with paths traced out by the savages who go to New Mexico or come from it, as likewise by

those who skirt along the Texian frontiers and the banks of the Canadian, for the purpose of hunting the buffalo and catching beavers and otters. The greater number of those savages are Comanches, Wacos, Kichais, and Quapaws. This last tribe, now almost extinct, derives its origin from the Arkansas nation, and lived formerly nine or twelve miles from the White River. They are men of commanding appearance, expert hunters, and brave warriors. It is stated that having, on one occasion, entered the Chikassas territory to hunt the buffalo, the latter did not dare to oppose their invasion, but deemed it more prudent to retire. The Quapaws' chieftain, having heard that the Chikassas acted thus because they had no powder, immediately ordered the provision of his own warriors to be emptied into a blanket, and having divided it into two equal portions, gave one to his enemies, and distributed the other amongst his companions in arms. Then a brisk combat took place, but the Quapaws remained victors.

On leaving the Witchita Mountains to ascend the northern branch of the Red River, the geological configuration of the soil changes completely. Granite disappears, and is replaced by carbonate of lime and gypsum, the bed of which extends from the Canadian to the Rio Grande in New Mexico. In some places this vein is fifteen miles in width, and produces every imaginable variety of gypsum, from the common plaster of Paris to the purest selenite, blocks of which are to be found that are more than a yard thick, and yet that are as transparent as glass. Here and there are also to be seen hills, that are either isolated or in regular groups, varying from 100 to 250 yards in height; the greater part are of conical form, composed of different layers of argil, gyp-

sum, and lime. Seen afar off, they resemble gigantic tents brilliantly variegated, and pitched in the immensity of the wilderness to shelter a colossal race. In those regions, as on the borders of the Canadian, you meet with long files of regular hillocks of blue or green clay, surmounted by a kind of palisade in gypsum, similar to the colonnades of an ancient city excavated from the bowels of the earth, and crowning a dome of verdure. These hills have the appearance of fortifications erected by a nation of giants. Truly may it be said that the works of nature are most rich in wonders, and in the desert those wonders are scattered about with marvellous profusion.

Towards the sources of the Red River begin the curious *cañons*, a kind of natural ravines of great depth, considerable numbers of which are to be seen throughout the entire surface of the great Western deserts. These ravines leave quite bare the crust of the earth, which in this spot is composed of several layers of ferruginous grit-stone, and of red or calcareous clay. In the latter are to be found fossil shells of the species *Helix plebeium*, *Succinea elongata*, *Ostrea*, &c. Sometimes you also meet in these ravines with large blocks of scoria and other volcanic productions, as likewise agate, onyx, chalcedony and wood fossils. As to the neighbouring prairies, they are actually strewed with fragments of carbonate of lime, partly concealed by the grass. The ravines render travelling rather a difficult matter in those countries, particularly for waggons; the obstacles, being for the most part insurmountable, oblige you to make continual circuits, which cause considerable loss of time. The *ennuis* and difficulties of these journeys are often augmented by the want of food, for in certain seasons of the year the buffalo and

WITCHITA MOUNTAIN.

deer, which become daily more wild, are scarcely to be found. The Trappers and Indians allure the cows and buffaloes that are within hearing by imitating the calf's cry; but this means is often dangerous, for it also draws panthers and other ferocious animals that are always on the watch near the encampments. Another trial that travellers have to endure in these latitudes, comes from the deleterious quality of the waters drawn from brooks and creeks, which aregenerally brackish. Necessity obliges you to drink them, and their frequent use occasions bowel complaints that are often very dangerous.

On approaching the source of the northern branch of the Red River, the latter becomes subdivided, deepens gradually, and flows from a series of narrow gorges, formed by rocks of sandstone and argil, 300 feet in height, which are lost in the declivities of the Llano-Estacado. The geographical situation of the source is twenty-four miles from the Canadian, at the 101° 55′ west long., and the 35° 35′ 03″ north lat. Then the best route to pursue for the purpose of visiting the other branch is to go directly towards the south, following the confines of the Llano-Estacado.

The geological formation of this country again differs from the one we have already made known. In the rocks the common gritstone predominates, as also veins of quartz, felspar, mica, and serpentine. The soil is studded with crevices, and is quite cut up by deep ravines, and the general character of the country is the aridity of a desert scorched by an overpowering sun. Silex trees are there in great abundance, and the petrifactions are so perfect, that the bark, knots, and fibres are as distinctly perceived as though the trees were yet alive. Quantities of these petrifactions are also to be seen in a

sandy plain covered with wild sensitive-plants, and particularly with *Schrankia augustata*. This plain is bound on the north by a labyrinth of sandy mamelons, fourteen miles long, from the summit of which may be descried the tableland of the Llano-Estacado, that rises to a height varying from 1000 to 1500 feet above the surrounding countries.

In these regions you continually behold the deceitful mirage. The phenomena it here presents are perhaps more singular and curious than in any other part of the world. The difference in density of the atmospheric pressure on those elevated plains causes extraordinary variations of reflection, which make distant objects appear under the most ludicrous and fantastic forms; meanwhile the reverberation of the sun on the surface of the prairies breaks the rays, and reflects the varied colours of the light on the azure of the firmament. At times a crow seen afar off appears to be a man hopping about, and an antelope takes the proportions of a buffalo or a camel. The imaginary lakes, the aërial cities, the rivers and graceful shades that embellish the greater number of these visions, assume, near the Llano-Estacado, softer outlines, more lovely tints, a more enchanting and poetic aspect—affording more beautiful representations—so that the delusion is complete. Unfortunately inexperienced travellers, parched with thirst and overcome with fatigue, soon discover that those seducing pictures are but a fatal lure.

The Comanches call the southern arm of the Red River Ki-chi-è-qui-ho-no, that is to say, river of the town of the dogs of the prairies. This name has doubtless been given to it on account of the quantity of those little quadrupeds (*Spermophilus ludovicianus*) that inhabit these

solitudes in far greater numbers than in the other American wildernesses. I do not think there exists in the world as stupendous a village as the one which the prairie dogs have constructed for themselves in the plain that leads to the sources of the Ki-chi-è-qui-ho-no. This village is twenty-five miles in length, and is equally extensive in width, which, supposing it to be almost circular, makes a superficies of about 625 square miles. From these gigantic dimensions one can easily judge of the numbers of the interesting population that live there.

Villages of the prairie dogs are to be found extending from Mexico to the farthest boundary of the United States. In making choice of a site for the establishment of their colony, the prairie dogs always choose an uncovered and rather elevated spot, sheltered from inundations, and on which grows a stunted weed that is their usual food. It is to be supposed that this quadruped can live without water, for it sometimes takes up its abode in a locality where neither river nor spring is to be found for more than twenty-two miles around, and on ground where not a single drop of water can be obtained, even by digging a well upwards of 120 feet deep. So that the borders of these villages have, generally speaking, an aspect of aridity and desolation. Those little vandals add to this sad appearance by gnawing and devouring all round their dwellings every kind of vegetation; they only spare a few flowers, the sight of which seems to please them, — such as the *Erigeron divaricatum*, the *solanum*, the *Ellysia myctagenea*, and two or three others of the same species.

The prairie dog resembles the squirrel in shape, size, and physiognomy: it has nothing in common with the real dog but its cry, which is very like barking. It bur-

rows for itself sometimes to a depth of nine feet, and afterwards places the earth it throws up from the galleries within in the form of a cone over its subterraneous abode. These galleries are generally from four to five inches in width, and frequently rattlesnakes and owls of a small species do not scruple to instal themselves in those spacious and commodious lodgings to the utter detriment of the lawful proprietors. In the fine season, the prairie dog seats itself during the greater part of the day on the summit of its dwelling, and then chatters with its neighbours in a most noisy manner. At the approach of a horseman, or of any dangerous animal, the first group that perceives the enemy barks in a particular way. Immediately the alarm is communicated from one to another, to all the citizens of the republic; each raises his head, pricks up his ears with uneasiness, and gives an anxious glance around him: then begins a chorus of shrill barking; an extreme agitation is seen to prevail throughout the village; and again, as if by enchantment, all is silent, and the entire community has disappeared under the earth with the rapidity of lightning.

Towards the end of October, when the dogs of the prairies feel the approach of winter, they fasten up with straw and stems of flowers all the passages leading to their burrows, then they fall asleep until the return of spring. In the great northern solitudes of Texas, one rarely takes a long journey without meeting many republics of prairie dogs. The borders of the Ki-chi-è-qui-ho-no, in particular, contain several very considerable ones.

The land surrounding this river is beautifully diversified; glens are more numerous and deeper than in any other part of the country. At the bottom of ravines, composed of beds of sand, gypsum, and red and blue clay,

flow meandering rivulets of limpid water. At the south-eastern extremity of the Llano-Estacado is the source of the Ki-chi-è-qui-ho-no; its geographical situation is the 34° 42' north lat., and the 103° 07' 11" west long., and its height is 4860 feet above the level of the Gulf of Mexico. It gushes with impetuosity from the bottom of a cavern, which it reaches in passing through a narrow corridor, formed by two natural walls that are 900 feet in height. Those cliffs, owing to the double action of time and water, have assumed the most fantastic and extraordinary shapes that can be imagined. Buildings, castles, and steeples of the mediæval ages, bassi-relievi and human forms are there mingled in a capricious and even in an artistical manner; everything is admirably combined to produce a picturesque effect of marvellous beauty. The summits of the two walls appear, under the azure veil of the firmament, like the letters of a gigantic alphabet. You feel inclined to think that the Divine Architect had wished to preserve, for this little corner of the earth, almost unknown to men, the primitive type, wild, and sublimely grand, of the antediluvian creation.

The Llano-Estacado, which we have already named several times, and which is on the east side of the Red River, is an even and very elevated plateau. Its name, which signifies the *staked plain*, has been given to it because, formerly, it was traversed by a road leading from Texas to Santa-Fé, in New Mexico, which was covered with stakes that served to indicate to travellers the localities where water was to be found.

The approximative length of this tableland is 250 miles, and its breadth 200. It extends from the Canadian to the Rio-Pecos and Rio-Grande, in Texas, between the 23° and 37° north lat., and from the 101° to the 104°

west long. Its entire surface is 30,000 square miles, and its height upwards of 3000 feet above the Gulf of Mexico. The borders of the Llano-Estacado are steep and almost perpendicular; they are white as snow, and thinly covered with briers and stunted cedars: afar off you would take it to be an immense cliff of marble, or of veiny alabaster, towering over the ocean of prairies. In the north may be admired a kind of screen, formed by a forest of cedars, but everywhere else not a tree is to be seen, save in a few ravines. It has been thought that the south-western winds in those latitudes prevent the growth of all high vegetation, but the prolonged drought, the nature of the soil, and the habit that the Indians have of annually setting fire to the prairies, account much better for this aridity than the violence of the winds.

The Llano-Estacado is very rich in fossils of yurassic, or cretaceous formation. This country is entirely uninhabited. The want of water makes both men and animals shun it. Even the savages venture there but seldom. A few antelopes, prairie dogs, lizards, frogs with horns and tails (*Phrynosoma platyrhinos cornitum*), rattlesnakes, tarantulas, and scorpions, are almost the only inhabitants of those elevated lands, even though the climate is mild and the air excellent. A fact worthy of note is that the trees that grow in the ravines or on the borders of the declivities do not decay as they get old, but become dry and hard as iron.

Generally the Llano-Estacado is only traversed in two or three places, where a few springs are to be found; but these two or three places are also frequented by the Comanches and other Indians, who rear horses to exchange them with Mexican merchants for tobacco, maize, flour, and other merchandise. Mexicans from New Mexico send

every year numerous flocks of sheep to graze and fatten on the luxuriant pasturage that is situated to the north of the plateau, without fearing that the savages would carry them off or slaughter them; for in those regions, where the primitive character of the Indians has not yet been perverted by contact with the whites, they never think of plundering their neighbours.

Such is this magnificent desert which, it may be said, is without water, without vegetation, and without inhabitants, scorched by an overpowering sun, and scarcely refreshed by the evening breeze. I know of nothing in the world more melancholy than those vast solitudes seen on a fine summer's night, when the moon, shining in the midst of the stars, sends forth the reflections of its silvery light over this boundless plain. The view is lost in a pale twilight, without shade, without echo; a light transparent mist hovers in the space. Scorpions, in crawling along, make their scales creak; large green and yellow lizards move slowly on the burnt grass. The melodious murmuring of the flowing waters is nowhere heard, nor the joyful rustling of the leaves. The birds, having no branches whereon to rest, enliven not the air with their song; the breeze whispers not in the foliage; nothing disturbs the silence of night unless it be the monotonous *cri-cri* of the solitary cricket. This silence oppresses, overwhelms you, like the thought of the infinite. You fancy yourself wrapped in a shroud of crape which envelopes the whole world, for life is only revealed by the twinkling of the stars, movement is only manifested by the motion of the moon pursuing its tranquil course through the celestial spheres. Nature seems plunged in an awful slumber, dismal, mysterious, full of sadness and pain, like the sleep of the dead in presence of eternity.

CHAP. VIII.

DESERTS OF THE SOUTH-EAST. — TOPOGRAPHY OF THE TABLELANDS. — THE SIERRAS OF THE SOUTH-WEST. — FORT SMITH. — UNDULATING PRAIRIES. — THE CHACTAS. — VALLEYS OF THE SANS-BOIS AND OF THE CANADIAN. — MORNING IN THE SOLITUDES. — NATURE OF THE SOIL. — SHAWNIES' VILLAGES. — EVENING ON THE ANTELOPE HILLS. — SINGULAR CAVE OF THE ROCKY DELL. — THE TUCUMCARI. — VILLAGES OF NEW MEXICO. — PECOS LEGENDS RELATING TO MONTEZUMA. — ARRIVAL AT SANTA-FÉ.

AFTER having visited the most southern deserts of North America, we shall now penetrate into the great solitudes of the New World, situated between 34° and 36° of N. lat. and 94° 26′ and 118° 16′ W. long. These immense regions begin at Fort Smith, on the Arkansas, near the Mississippi, and extend as far as the Gulf of California, or Vermilion Sea, occupying about 1893 miles of territory almost unknown to Europe.

From Fort Smith to Santa Fé, capital of New Mexico, there is a distance of 825 miles at least. You reach it by an imperceptible ascent, which rises gradually to more than 6000 feet above the level of the sea. This country is but a vast tableland, inclining towards the east, and is furrowed with deep valleys, hollowed out by the rivers that run through it. According to the geological formation of the soil, the extremities of this *plateau* are either perpendicular, and indented like those of the Llano Estacado and of several other points, or else they descend by an easy slope to the bed of the rivers, as on the Arkansas and the Canadian.

SAND HILLS ON THE CANADIAN.

Between the mountains of Santa Fé and the Sierra Madre, there exists another tableland, trending also towards the east. It has an extent of 300 miles, and is traversed in all its eastern part by the Rio Grande and the Rio Puerco. This district is composed of rocks, set in horizontal strata, and more or less deeply hollowed out by the action of the running waters.

The Sierra Madre may be considered as the ridge of those deserts; it is their culminating point; from thence stretch forth towards the east and west the two great slopings of high prairies which form the peculiar characteristic of these countries.

Five chains of mountains cross those regions. The first is formed by the Sandia, the Golden, and the Santa Fé Mountains. This range is intersected in several places by low and very wide passes. The Sandia Mountains have a most magnificent Alpine aspect, and their summits attain to the height of 12,000 feet above the level of the sea. The second is the Sierra Madre, sometimes called Sierra de Zuñi. It forms the point of separation between the waters that direct their course towards the Mississippi and those that flow towards the Pacific Ocean. It is crossed at Campbell's Pass, which is 7950 feet above the Gulf of Mexico. The three other chains are the Sierra of the Aztecs, the Aquarius Mountains, the Sierra of Cerbat, and the Sierra of the Paï-Ute, or Paï-Utas. These five great lines follow an almost uniform direction, going in a parallel manner from north to south, and finally disappear, either in the Rocky Mountains, or in the northern provinces of Mexico, or else in the different and as yet unexplored basins of the south-western deserts.

Such is the general configuration of those solitudes which are covered with ruins and remnants of Indian

populations formerly very numerous. The Indians who are yet to be found there have, for the most part, fixed dwellings built in quite a peculiar style; they differ more or less from the other Indians who surround them in their religion, their customs, and manner of living.

To go from the United States to the Gulf of California *viâ* New Mexico, the best and shortest route is the one which Nature herself has traced out in forming the valley of the Canadian, which is one of the principal tributaries of the Arkansas.

It is at Fort Smith, situated on the frontiers of the State of Arkansas, that, geographically speaking, the wild solitudes of the south-west begin. This fort is built on the right of the Arkansas, and near the mouth of the Poteau, at 30° 22′ 55″ N. lat. and 94° 29′ W. long. (Greenwich meridian). Its elevation is 450 feet above the level of the sea, and the distance that separates it from Memphis, on the Mississippi, is of about 315 miles. The hill which serves as a basis to the fort is of a micaceous and dark grey sandstone, and the utmost height it rises to is thirty feet above the river.

Immediately on leaving Fort Smith you cross the Poteau, which is more than 150 yards in width, and is very deep in the wet season. You then penetrate into the shoal, formed of thickly-wooded alluvial soil, which frequently abounds in a species of rush (*Arundo phragmites*). For nearly 150 miles the country you traverse is irrigated by numerous streams, varying in breadth; it is composed of plains and hills covered with ash-trees, elms, black walnut-trees, pacanes, willows (*Salix angustifolia*), cotton-trees (*Populus canodensis et S. monolifera*), besides many varieties of oaks. The plains are not regularly undulated, many very beautiful plants are to be

found there, the silvery euphorbia, turnsols, *Euphorbia marginata*, *Eupatoria purpurea*, *Veronica fasiculata*, &c. The prairies are dotted with fields of Indian corn, and clothed with luxuriant pastures, which feed numerous herds of oxen and horses belonging to the Chactas, to the Shawnies, and to the Delawares, whose farms succeed each other almost uninterruptedly at the entrance of the desert.

Six miles south-west of Fort Smith is situated Soullyville, the actual residence of the agent sent by the United States' government to the Chactas. This village consists of about thirty houses, the greatest part of which are stores, or entrepôts of merchandise for the use of the Indians.

Before reaching the mouth of the Canadian you leave on the right Fort Coffee, so called, probably, in honour of General Coffee, celebrated for the combats he sustained against the Creeks in 1812. Near to the fort may be seen hills of carbonic gritstone, laid in horizontal and even beds, which rise above the Arkansas like an immense staircase, each step of which forms a terrace shaded by all sorts of shrubs. You then cross the Sans-bois (river), which is little more than thirty yards wide. This river flows through a dense forest of noble trees, from the midst of which mountains rise to a height of 1950 feet; but so denuded are their summits that the Trappers call them Sans-bois (woodless).

From the other side of the river you at once enter the valley of the Canadian, which the Mexicans and Indians have also denominated Red River. This stream is often more than 150 yards in width, but it is very shallow, and when not swollen by the rains can be forded on horseback at many points. It slopes down six feet for every quarter of a mile. Its water is whitish, almost

clear, and slightly alkalined. According to the latitude it flows over beds of sand, gritstone, lime, or gypsum. Like the Red River of Texas, it traverses the Cross-Timber and the immense bed of coal which we have already spoken of in the preceding chapter. The valley it fertilises is remarkably beautiful. Oaks, elms, enormous cedars, many varieties of rare plants, wild vines bearing luxuriant grapes, rocks containing fossil shells, and rivulets abounding with fish of the most curious kind, are to be found there. You fancy you are in an English park a hundred miles long.

In the morning this new Eden presents a truly pleasing and animated spectacle. Long before the first gleams of dawn the oaks and pines of the solitudes are enlivened with confused notes and mysterious warblings; the dew drops fall on the grass and on the flowers with a sad and harmonious sound. Everywhere sweet voices reach the ear, soft as the murmur of a spring running in the midst of a prairie, plaintive as the rustling of the cedar's leaves, and strange as the creeping of a reptile on a tuft of green sward. When the gilded whiteness of daybreak tinges the east, the peaks of the rocks and the summits of the hills, the trees, and the valley, assume an azure hue, the cry of the wild hen is echoed from distance to distance, the flying squirrel (*Pteromys volucella*) hops from branch to branch, the antelope bounds about the plain, the red fox and the panther are seen quenching their thirst on the borders of rivers and streams, in which otters and beavers bathe. Gradually you perceive between hills, over which the first rays of the sun cast a copper-coloured tint, bluish landscapes lost in the mists of a boundless horizon, and the outlines of this virgin nature assume softer and more lovely forms, wherein the grandeur of the ensemble strug-

gles for pre-eminence with the sublimity of the details. Verily the deserts of the New World are filled with enchanting aspects and striking scenes. The shapes, the hues, the colours, the sounds, are there blended with a harmony full of charm and variety, which proclaim the omnipotence of the Creator of the universe.

More to the west, the valley of the Canadian partakes of quite a wild character. The river flows at the foot of a long range of sand-hills and of porous gritstone, surmounted by a terrace of vesicular sandstone in horizontal beds of six yards in breadth. Some of those hills are very elevated and steep. Heretofore they only formed a continuous plateau, which rain and time have divided and shaped in the extraordinary manner that strikes and astonishes us now. In the shoals you sometimes meet with moving sands, which are very dangerous in the season of the great rains; but, in general, all this country may be travelled over in carriages, although it is cut up by deep ravines, by broad creeks, that flow into the Canadian, and is dotted with hillocks of dark grey schist, which extend into the Delaware Mountains. The soil is arable and very fertile, particularly in the vicinity of the watercourses. The Chactas, the Shawnees, and the Delawares cultivate there to advantage maize, corn, the sweet patate, potatoes, rice, tobacco, &c. The trees that grow in the plains are either scattered here and there or in clusters; it is only on the borders of the rivers that they unite in sufficient quantities to form tolerably thick ranges of wood.

Before and after Old Fort Edward, situated at 35° N. lat. and 96° 50″ W. long., you come in sight of some Shawnees' villages, which betoken a rather advanced state of civilisation and of comfort. The houses are spacious and commodious, they are surrounded with fruit

trees and kitchen gardens. The fields are well cultivated, and give proof of decided progress in agriculture. The Shawnies are robust and intelligent Indians. The women, who are active and laborious, till the ground, the men being either too proud or too idle to give themselves up to any other pursuit than that of the chase. Some Indians employ black slaves or Mexicans for husbandry and other fatiguing duties. In this case the women are solely occupied with the cares of their household. Those slaves are generally purchased from the white men, or are taken from amongst the prisoners and the children stolen by the Comanches, and sold to the Indian agriculturist. The young Shawnee girls have rather more of a white than of a red complexion, and some of them are even very handsome. The towns and villages belonging to this tribe are thinly peopled, but very extensive, the houses being built at a distance of 500 to 1000 yards from each other, yet connected together by orchards, gardens, and cultivated fields.

The Delawares, the Kiowais, and the Chickassas have also establishments in those regions. Excellent Indian roads lead from one village to another, wending through a forest or passing between rocks of very difficult approach. In beholding such stupendous works you feel surprised that the present Indians should have had energy, skill, and public spirit enough to undertake and achieve them so well. The Delawares do not appear to be as civilised as the Chactas and the Shawnees, neither are their farms kept in such good order. These three tribes live on very good terms with each other. From time to time intermarriages bind still faster the ties of friendship which unite them, and will eventually cause all difference of origin to disappear completely. The priests, or medicine men, of the Dela-

wares assemble once a year to renew the ceremony of the sacred fire, which is preserved during the year with great care; but of this hereafter.

The Delaware Mountain, which is close to 97° W. long., forms the boundary between the wooded plains of the south-east and the superior prairies of the south-west. Immediately on passing Mount Delaware, you enter an elevated and undulating prairie, of a sandy and calcareous formation, which is almost entirely stripped of trees, except in the ravines or on the borders of the streams.

Formerly, buffaloes abounded in this plain, and at Fort Holmes—more frequently called Fort Chouteau, in honour of the celebrated Frenchman who founded in the solitudes so many houses of traffic for the Indians—quantities of buffalo skins and of other furs were annually received from the savages; but now the name alone remains, for the very ruins have disappeared, like the buffaloes themselves.

At this place the plain becomes thickly wooded, and soon after you arrive in the region of the Cross-Timber. On the right bank of the Canadian, and at a short distance from the river, is to be seen a series of natural tumuli, and of columns of sandstone, varying from sixty to ninety feet in height, which resemble the gigantic pillars of a colossal temple. Among the most curious of the tumuli we must cite the Rock Mary, which looks like an observatory, similar in form to a sugar-loaf, and is surmounted by two turrets of singularly graceful effect. These earthy masses appear to be the remnants of a geological formation, superior to the actual soil and decidedly more ancient. In all probability they were caused by the powerful action of the great inundations of the deluvian epoch, rather than by the slow effects of rain and time. Be this as it may,

it is evident that an upper crust, composed principally of red sandstone, covered all this country many centuries ago; this crust has been ploughed up and almost entirely carried off by the floods; there now only remain a few vestiges of it scattered over the surface of the ground, but still erect, as if to invite science to penetrate the secrets of the wilderness.

From Rock Mary you reach the Antelope Hills, situated at 100° W. long., by passing through a country strewed with gypsum; this substance is to be found on the surface of the soil in every possible form, earthy, fibry, selenitic and massive: it is owing to its vicinity that the waters are of such an injurious quality, particularly between the Canadian and the Washita. The Antelope Hills form a group of five separate hillocks: they are sometimes called Boundary Mounts; like Rock Mary, Mount Delaware, and other localities of which we have already spoken, they are kinds of landmarks, or stations, that serve to guide travellers through the southern deserts. The Antelopes vary in height; they are from 120 to 150 feet above the prairies. Two of those hills are conical and the others oblong; they are composed of porous sandstone, and are crowned with white and regular terraces six yards thick.

From the summit of these terraces you enjoy a most commanding view. On the left is to be seen the reddish bed of the Canadian, whose tortuous windings, coming from the south-west, direct their course for a while northwards, and finally disappear in a distant easterly direction. The horizon is but an immense circle of verdure, of which you occupy the central point. Here and there a few white and red acclivities rise above the plain, divided by rows of trees, indicating a ravine, or more frequently an hum-

NATURAL HILL.

ble brook. At night a balmy wind continually sweeps over the sun-burnt grass, and bears along with it the sweet wailings of nature, reminding one of the plaintive sighs of a suffering soul; these soft sounds are revived from minute to minute, then they gradually die away until they are completely lost in the immensity. The moon appears like a globe of alabaster drowned in azure vapours; its translucent light sheds a snowy whiteness on the borders of twilight and on the summits of venerable oaks. Whilst the red and black tints fade away from the heavens, the orb of night bedecks the starry canopy with a silvery hue. The only sounds that then reach the ear are the chirp of the cricket in deep glens, and the croaking of the frogs on the surface of the desert. Man from the top of those barren hills feels himself fascinated by the powerful melancholy of the solitudes, by their darkness and their silence; his heart sinks sorrowfully within him, and dwindles like the immortelle that grows on a tomb, and is overtaken in all its bloom by the winter snow; his thoughts are absorbed in profound meditation, in sublime reverie, which elevates him above himself, and transports him in imagination to luminous regions, where quite a new world is revealed to his astonished soul.

Shortly after passing the Antelope Hills, you traverse the Dry River, which is from 100 to 200 yards in width, but which generally contains nothing but sand. From thence unto the first prominences of the Llano-Estacado, the valley of the Canadian (which you have continually to ascend) presents only a succession of natural tumuli and of insignificant streams.

At 157 miles westward of the Dry River, the borders of the Llano Estacado are sloped by a narrow vale called the Rocky Dell. In this spot is situated a perpendicular

rock, in which is cut a sort of grotto that the Indians have turned into a kind of gallery of fine arts. The natural flags that cover the floor have been most curiously sculptured, and the walls are adorned with hieroglyphical drawings and paintings. Amongst the animals they represent, the buffalo, the bear, the elk, the dog, and the crocodile are the most prominent. Human forms are also to be seen there, one of which is a Spanish cavalier with his *serape* (blanket), and the *sombrero* (hat) on his head; the whole rather well finished. The carvings and paintings that embellish the interior of the grotto are very numerous; the modern emblematical inscriptions are mingled with the more ancient ones, and are often even sculptured or painted over them—so much so, that the greater number can no longer be deciphered, This savage museum is, nevertheless, highly interesting; it deserves to be thoroughly and earnestly studied, and perhaps, by that means, some one may be able to recover a few pages of the history of the Indian tribes of those latitudes.

Between the Llano-Estacado and the Canadian, facing the Rocky Dell, you perceive a beautiful plain, called by the Mexicans Plaza Largà, and which is remarkable for the beauty of its sites, the fertility of its soil, and the mildness of its climate. To the north may be descried very lofty mountains, rising one above the other in terraces of divers colours; they look like the steps of a Titanic staircase that would join heaven to earth; each step is overgrown with dwarf cedars and with pines of a very small species. The flora of this region is very rich and of profuse variety.

The valley of the Tucumcari, which immediately succeeds the Plaza Larga, contains an immense selection of geological phenomena. Nature seems to have taken plea-

sure in assembling in this spot, already so picturesque, the most extraordinary objects, to which the double action of time and of water has imparted the most fantastic shapes. It abounds in fossils, as well as in cactus, yuccas, mesquites, and other very rare plants. This valley also possesses a very curious pyramid 510 feet in height; it is formed of twelve horizontal beds of lime, of sandstone, and of white, yellow, grey, green, and red marl. The superior strata of this pyramid of Jurassic formation contain numerous fossils, amongst which may be remarked the Gryphæa Tucumcarii, which is a new species or a variety of the Gryphæa Pitcheri. Besides this pyramid, which is surmounted by two turrets, and whose basis is ornamented with a multitude of counterforts in marl of different colours, there are also to be seen, in the same valley, rocks of grit-stone resembling towers or fortresses of the mediæval ages, Gothic castles, cathedrals in ruins, minarets, broken columns, or even enormous vases, that look as if they had been fabricated by giants.

After the Tucumcari, you totally abandon the Canadian river, and direct your course towards the Rio Pecos, which you leave to the rear a little before you reach the 105° W. long. You then arrive at Anton Chico, where the road divides itself; the south-western one leads to Albuquerque, and the north-western one to Santa Fé, along the banks of the Rio Pecos, to the ruins of the village of the same name. Anton Chico is the first town you meet with on entering New Mexico; its population does not exceed 500 inhabitants, who live in houses constructed with *adoubes*, or large sun-dried bricks.

The valley of Pecos is richly cultivated, Indian corn grows there in abundance, and the road that borders the river as far as old Pecos wends its way through a series

of meadows and vegetable gardens, which betoken the great fertility of the soil. Midway you stop at San Miguel. This village is built up against mountains, which rise like an amphitheatre around it. The Pecos flows at its feet. This river is barely more than three feet in depth by twenty-one to twenty-four in width. During the entire day women may be seen going thither, bearing on their heads great jars, which they replenish with water. The young girls of this place are in the habit of painting their faces white, or of dyeing them with the juice of wild fruits. The inhabitants of San Miguel manufacture honey, or rather molasses, with the stems of maize, which they bruise by means of great mill-stones. Among the birds which people this delicious valley, the starry jay (*Garrulus stelleri*), whose noisy song is heard from morning to evening, deserves special notice. These birds generally accompany the travellers who may chance to pass near them; they fly from bower to bower, singing all the while, as if to beguile the weariness of the journey. These solitudes are also frequented by the remnants of the ancient tribe of the Teguas, who trade with the Comanches of the prairies and with the Santa Fé merchants.

The interesting ruins of old Pecos are situated on a little hill close to the river. The church, which is in the form of a cross, arises above dilapidated houses; its two front towers and exterior walls are yet in a good state of preservation, but time tears away daily some of its stones. This village was renowned on account of a peculiar race of Indians who lived there. Many very singular legends are told concerning them. Formerly they kept in their temple an immense serpent, to which they offered human sacrifices. It is also at Pecos that the sacred fire, kindled by Montezuma, was preserved: every year a man was

appointed to keep up this fire under penalty of death. It is related that one day, Montezuma being at Pecos, took hold of a great tree and planted it upside down, remarking at the same time, "that when that tree should disappear, a foreign race would reign over his people, and that rain would cease to fall." He then recommended to the priests to watch over the sacred fire until the fall of the tree, which event would occur when a multitude of white men, coming from the east, should destroy the power of their oppressors; and that he himself would return afterwards to restore his kingdom. Then should the earth be fertilised by abundant rain, and the nation be enriched by the treasures buried in the midst of the mountains.

From Pecos, Montezuma directed his steps towards Mexico, building numerous towns as he went along. "There," say the Indians, "he lived until the arrival of the Spaniards, then disappeared to return soon, for up to the present moment the prophecy has been fulfilled. The country has become dry, arid, and deserted; the tree of Pecos fell the very day the Americans entered Santa Fé, and the last priest who guarded the sacred fire died at the same period." To this day many Indians live in anxious expectation of Montezuma's return; and at the village of San Domingo, situated on the Rio Grande, a sentinel ascends every morning at sunrise to the roof of the highest house, and, with eyes directed towards the east, looks out for the arrival of the divine chieftain, who is to give the sign of deliverance.

Pecos is barely twenty-eight miles from Santa Fé; the road that leads thither is a tolerably good one, although it traverses narrow passes and deep gorges, ending at the Rio Chiquito, or the Rio of Santa Fé. This little

creek is a tributary of the Rio Grande; it irrigates the magnificent plain, in the back-ground of which are scattered the houses of the strange capital of New Mexico. Strange indeed! for it is neither savage, nor civilized, nor Indian, nor American, nor Mexican;—silent in the daytime, it resounds in the evening and at night with the noisy merriment of the *fandangos*;—a town at the same time sad and gay, full of promise for the merchant, and of melancholy for the poet.

CHAP. IX.

DESERTS OF THE SOUTH-WEST. — NEW MEXICO. — INFORMATION GIVEN BY AN INDIAN FROM TEJOS. — KUÑO DE GUZMAN'S ATTEMPT. — PAMPHILO NARVAEZ'S DISASTER. — CULIACAN. — FATHER MARCOS DE NIÇA'S JOURNEY. — DISCOVERY OF NEW MEXICO. — VASQUEZ CORONADO'S EXPEDITION. — TAKING OF CIBOLA. — THE TIGUEX. — CONQUEST OF NEW MEXICO. — INDIAN REVOLTS. — VALLEY OF THE RIO GRANDE. — QUIVIRA. — GEOGRAPHY OF NEW MEXICO.

BEFORE we penetrate farther into the deserts of the south-west, let us relate the events which preceded and followed the discovery of New Mexico; these events, as yet little known in Europe, are well worthy of our attention.

In the year 1530, Nuño de Guzman, at that time president of New Spain, had in his service an Indian, a native of the country of Exitipar, which was called by the Spaniards Tejos or Texos, and which, in all probability, was no other than the present Texas. This Indian told his master that he was the son of a merchant, long since dead; that during his childhood his father used to go into the interior of the country to sell the handsome feathers with which the Indians adorn their head, and that he brought back, in exchange, a great quantity of gold and silver, which metals were, according to him, well known in that country. He assured him that having on one occasion accompanied his father, he had seen seven large towns, in which entire streets were inhabited by people working the precious metals. Finally, he

added that, to arrive there it was necessary to travel for forty days through a wilderness, where nothing was to be found save a short grass, and then get into the interior of the country, keeping due north.

Relying on this information, Nuño de Guzman assembled an army of 400 Spaniards and of 20,000 Indians, allies of New Spain; he started from Mexico, traversed the province of Tarasca, and reached that of Culiacan, the limit of his government. No road leading farther on, and having great obstacles to surmount in order to pass over the mountains which intercepted his route, he now saw the greater number of his officers and allies get discouraged and abandon him. Meanwhile, he was apprised that Hernando Cortez, his personal enemy, was returning to Mexico, loaded with titles and favours; he, therefore, resolved to stop at Culiacan, and colonise that province. Shortly afterwards the Tejos Indian died, and Nuño de Guzman was thrown into prison.

Some time previously, Pamphilo Narvaez, Hernando Cortez's unfortunate rival, having been named governor of Florida, had left St. Domingo with 400 men and 80 horses, in five ships; he reached Florida on the 11th of April, 1528. On the 1st of May following, he sent his vessels to seek out a good harbour, and penetrated into the interior of the country at the head of 300 men. After long and weary marches, Narvaez returned to the coast to join his flotilla, but it was nowhere to be found; the officer who commanded it had left for the Havannah, forsaking Narvaez and his companions. The latter then determined on constructing barks, in hopes of reaching Panuco by coasting towards the west. The spurs, the stirrups, and all the iron utensils belonging to the little band were speedily converted

into nails and tools, and although the Spaniards had but one carpenter amongst them, they succeeded in constructing five boats in the space of six weeks. During this time the horses were eaten, and on the 22nd of September in the same year Narvaez set sail, accompanied by 242 men only, the others having died from hunger and fatigue, or from the wounds they had received whilst fighting the Indians. On the 29th or 30th of October, after a most perilous navigation, the Spaniards discovered and pointed out to Narvaez the mouth of the Mississippi. They almost all perished shortly after; some from hunger, others from shipwreck, and the remainder were threatened by the natives.

There only survived Cabeza de Vaca, boatmaster, Esteva Dorantes, an Arabian negro, and Castillo Maldonado. At the end of eight years these three men reached Mexico, having traversed on foot the American continent from the Mississippi to the Pacific Ocean. They related their adventures, declared that they had met with Indian tribes, some of whom cultivated maize, while others lived on fish and the produce of the chase; that they had heard of large towns with lofty houses containing many stories, and situated in the same direction as those spoken of by the Tejos Indian.

Don Antonio de Mendoza, at that time viceroy of New Spain, caused these three travellers to be brought before him, and communicated the information he received from them to Francisco Vasquez Coronado, a nobleman of Salamanca and governor of the province of Culiacan. The latter at once left Mexico, and hastily returned to his province.

When Nuño de Guzman had conquered the new kingdom of Galicia, the first town he built there was Culiacan.

It is situated 68 miles west of Mexico. According to Pedro de Castañeda de Nagera, who had joined Coronado's expedition, there were three large and perfectly distinct populations in that country: the Tahus, the Pacasas, and the Acaxas. The Tahus were the most intelligent and the most civilised nation, and the one that first embraced Catholicism. Previous to the conquest those Indians adored the evil spirit under the form of large serpents, which they reared with the greatest veneration, and to which they made offerings of stuffs and of turquoises. Although these men were very immoral, yet such was their respect for all women who led a life of celibacy, that they celebrated grand festivals in their honour.

The Pacasas were more barbarous; they ate human flesh, married several wives, even their own sisters, and adored carved or painted stones. The Acaxas were also cannibals; they hunted men like wild beasts, and built their villages on steep cliffs, separated one from the other by ravines over which it was impossible to pass.

Coronado had taken with him the negro Esteva and three Franciscan monks, one of whom was father Marcos de Niça, who had already taken part in the expedition which Don Pedro d'Alvarado had conducted by land to Peru. As soon as the governor had reached Culiacan, he sent Father Marcos forward to descry the country, with which object the latter began his tour on the 7th of March, 1539, in company of the two other Franciscans, the negro, and a goodly number of emancipated Indians.

The little band remained three days at Petatlan, chief town of a province of the same name, a short distance from Culiacan. The name of Petatlan was given to it because its houses were constructed of matted rushes, called *pétates*. The inhabitants, whose customs resembled

those of the Tahus, had their villages built on the borders of the rivers and on the mountains. As he journeyed along, Father Marcos met entire populations, who received him with pleasure, and gave him provisions, flowers, and other presents. The first desert he afterwards saw, and of which he speaks in the account of his journey sent to the Emperor Charles V., is, doubtless, the one situated between the Rio Yaqui and the Rio Sonora. This country is certainly very barren, and quite destitute of water for a distance of about 110 miles.

The Indians who lived beyond this desert occupied the valley of the Sonora, which Cabeza de Vaca had named Tierra de los Corazones (Country of the Hearts), because when he passed there, a great many hearts of animals had been offered to him. The inhabitants of this valley were numerous and intelligent; the women wore petticoats of tanned deer-skin. Every morning the Caciques ascended little eminences, and, for above an hour, would indicate aloud what each was to do during the day. At their religious ceremonies they stuck arrows around their temples, resembling in this the Zuñis of the present day, who sometimes stick them round their altars and tombs. Father Marcos found, on the borders of this desert, other Indians, who were greatly surprised to see him, for they had not the slightest idea of the Christians. Some of them would try to touch his garments, and would call him *Soyota*, which signifies, Man come down from heaven. Those Indians told him that, should he continue his route, he would soon enter a very extensive plain, full of large towns, which were inhabited by people clad in cotton, wearing gold rings and earrings, and making use of little blades of the same metal to scrape the perspiration off their bodies.

Although the information given by Father Marcos is rather vague, and though it is scarcely possible to state precisely the route he followed, or to indicate the geographical positions of the countries he passed through, it is probable that the plain here spoken of is that of the Rio de Las Casas Grande, situated 150 miles east of the Rio Sonora, which is to this day all covered with imposing ruins, reminding one of handsome and populous cities. After a few days' march, Father Marcos arrived at Vacapa, now called Magdalena, situated on the Rio San Miguel, 120 miles from the Californian Gulf. The inhabitants of this town were, no doubt, the ancestors of the Cocopas, who are now spread from the mouth of the Rio Colorado to the north-western deserts. Father Marcos remained a few days at Vacapa, to enable his fellow-travellers to rest themselves, the Indians generously giving them everything they were in need of. The monks being displeased with the negro, who was misconducting himself towards the women of the country, and who only thought of enriching himself, resolved on sending him away; but, as he knew how to make himself understood by the natives of that country, — through which he had already travelled,—and that he was known to those Indians, Father Marcos determined on sending him forward, with orders to acquaint him at once of whatever discoveries he should make.

Four days afterwards, Esteva despatched to his superior a messenger, who related wonderful things of a large town called Cibola, known in the present day by the name of Zuñi. According to the fashion of his tribe, the messenger's face, breast, and arms, were painted. Those Indians, whom the Spaniards called *Pintados*, lived on the frontiers of the seven towns forming the kingdom of

Cibola; their descendants, now called Papagos and Pimas, still reside in the same country, which extends from the valley of Santa Cruz to the Rio Gila. Cibola, the first of the seven towns and capital of the kingdom of that name, was situated thirty days' journey from Vacapa. The Pintados said they often went there, and were employed in tilling the ground, and received for their wages turquoises and tanned hides.

An Indian of this town told Father Marcos, that "Cibola was a great city, densely peopled, with a great number of streets and squares; that in some quarters there were very large houses, with ten stories, where the chieftains assembled, at certain times of the year, to discuss public affairs. The doors and fronts of those houses were adorned with turquoises. The inhabitants had white skin, like the Spaniards, and wore wide cotton tunics that reached to their feet. These garments were fastened round the neck by means of a button, and were ornamented at the waist with a belt studded with very fine turquoises. Over those tunics some wore excellent cloaks, and others very richly wrought cow-hides." The same Indian added: "that towards the south-east, there existed a kingdom called Marata, with large populations and considerable towns, the houses of which had several stories; that these peoples were continually at war with the sovereign of the seven towns; and that, in the direction of the south-west, on the Rio Verde, was another kingdom, called Totonteac, which was as wealthy as it was densely peopled, and whose inhabitants were dressed in fine cloth." Although these narratives were exaggerated, it is not less a fact that all those countries were thickly peopled, intersected with roads, and studded with towns.

When Father Marcos had rested himself, he took mea-

sures to rejoin his negro, accompanied by the Pintados, who served him as guides, and he left Vacapa on Easter Monday. He was everywhere welcomed with the same marks of kindness and the same cordiality; every where he received presents of turquoises, tanned skins, rabbits, quail, game, maize, and vegetables. On the 9th of May he entered the last desert that separated him from Cibola. Having stopped for a few minutes to dine at a farm-house, he saw one of Esteva's companions coming hastily towards him, quite covered with perspiration, faint from fatigue, and trembling with fear. This man told him that the inhabitants of Cibola had first imprisoned the negro and afterwards put him to death, as also several of the Indians who accompanied him. These tidings threw consternation among Father Marcos's followers. The greater number of them were relatives or friends of the victims; they accused him of being the cause of this misfortune, and resolved upon killing him. He fortunately escaped this danger, and returned in all haste to Culiacan, where he related to the governor all that had occurred during his expedition.

Captain-General Vasquez Coronado, encouraged by the accounts given by Father Marcos, and hoping to discover new territories, at once organised in New Spain a little army, which assembled at Compostella, and on the day following Easter, 1540, he put himself at the head of his troops, composed of 150 horsemen, 200 archers, and 800 Indians. Having reached Culiacan, the army halted to take rest. At the end of a fortnight, Coronado moved forward, accompanied by fifty horsemen, a few foot soldiers, and his best friends, among whom was Father Marcos. The command of the remainder of the troops was confided to Don Tristan d'Arellano, with orders to

leave fifteen days later, and to follow the same route as the Captain-General.

After a month of fatigue and of privations of all kinds, Vasquez Coronado arrived at Chichilticale. This name, which signifies Red Town, was given to this locality because a large house of that colour was to be seen there, which was inhabited by an entire tribe that came from Cibola, where the last desert begins. At this place the Spaniards lost several horses, and even some men, from want of food. Nevertheless, encouraged by their chief, they continued their march, and, a fortnight after they had left Chichilticale, they arrived within twenty-six miles of Cibola. They saw for the first time the natives of this singular kingdom; but the latter immediately took to flight, spreading the alarm throughout the country by means of great fires which they kindled on the high mountains — a custom in use to this day among the tribes of New Mexico.

Next day, Coronado came within sight of Cibola; the inhabitants of the province had all assembled and awaited the Spaniards with a steady attitude. Far from accepting the proposals of peace which were offered to them, they threatened the interpreters with death. The Spaniards then, crying out, "San Jago! San Jago!" attacked the Indians with impetuosity, and, notwithstanding a vigorous resistance, Coronado entered the town of Cibola as conqueror. In fighting, the Indians had made use of arrows and of stones, which they threw with much skill. During the assault, the Spanish general was thrown down by an enormous stone which was hurled at him, and would have been killed, had it not been for the strength of his armour and the devotedness of his friends, Garcia Lopez de Cardenas and Hernando d'Alvarado, who shielded him

with their bodies while some others helped him up. Coronado found neither old men, women, nor children under fifteen years old in the town. The besieged had caused them to be taken to the mountains before the action began. The description which, in his report to the Emperor Charles V., he gives of the country, its climate, its inhabitants, their customs and their usages, resembles much what we see now-a-days among the Zuñis and in their province. In general, when one studies attentively the writings of the Missionaries, and of the other Spaniards of the sixteenth and seventeenth centuries, sent by the viceroys of New Spain to discover distant countries, the information given by those writers is found to be exact, although often incomplete or exaggerated.

The remainder of the army, which had remained at Culiacan, took the route, at the time appointed, to join the Commander-in-Chief. Every one was on foot, with a lance on his shoulder and carrying provisions. After unheard-of fatigues, the column reached the valley of San Miguel, amidst the Corazones; but as the maize was not yet ripe, and the soldiers were dying from hunger, their commander, Don Tristan d'Arellano, changed routes and marched towards a valley which the Spaniards called Señora, a name which was changed into that of Sonora. The valley of Suya, where the army at this epoch founded the town of San Hieronymo, is 120 miles farther on than the one of the Sonora. These two valleys were peopled with Indian agricultural tribes, whose language, manners, usages, and religion were alike. The women painted their chins and all round their eyes; the men were very depraved, and intoxicated themselves with wine made from the Pitahaya, which grows everywhere there in abundance; they also

tamed eagles, as is yet the custom among some tribes of New Mexico.

On reaching the Sierra Mogoyon, the Spaniards lost several of their companions, from the severe privations and difficulties of the route. During this march, the army crossed many rivers, which flow into the Californian Gulf, and on the banks of which they found numerous Indian tribes who cultivated maize, kidney beans, pumpkins and melons of such an enormous size that a man could scarcely move them. After a march of 975 miles, the detachment directed it course towards the north-west, and soon made its junction with Vasquez Coronado, the general-in-chief, at Cibola. In consequence of this reinforcement, Coronado took measures to follow up his conquests, by sending Alvarado, his lieutenant, to take possession of the province of Tiguex, on the Rio Grande.

This province was subdued after a resistance of fifty days on the part of the Indians. It contained twelve towns governed by a council of old men. The whole community helped to construct each house; the women made the mortar and built up the walls, and the men brought the wood and prepared the timbers. Underneath the houses and the court-yards were subterraneous stoves, or drying-places, paved with large polished flagstones. In the middle was a furnace on which they threw, from time to time, a handful of thyme, which was sufficient to keep up an intense heat there, so that one felt as if in a bath. The men spent a considerable part of their time in those places; but the women could not enter there, except to carry food to their husbands or sons. The men spun, wove, and attended to the tillage of their grounds; the women occupied themselves with the care of their children and

household affairs; they were the mistresses of the house and kept it remarkably clean. In the large houses, each family had several rooms; one served as a sleeping-room, another as a kitchen, and a third for the purpose of grinding wheat. In the latter was an oven and three large stones; three women would seat themselves before these stones; the first would crush the grain, the second bruise it, and the third pulverise it completely. While they were thus employed, a man, seated at the door, played on a kind of bagpipes, and the women worked to measure, all three singing together, and marking the rhythm by striking with their tools the wheat they were grinding.

The young girls were completely deprived of raiment, even during the most severe frosts; it was only when they married that they were allowed to cover themselves. The young people could only enter the married state with the permission of the old men who governed the town. The young man had then to spin and weave a mantle; when completed, the girl who was destined to become his bride was brought to him; he wrapped the mantle round her shoulders and she thus became his wife.

From Tiguex, the Spaniards went to Cicuyè,—now called Pecos,—which they also subdued. From thence, Coronado started for Quivira, with a few men chosen among his best soldiers, postponing, until the following spring, the conquest of the whole province. In 1542, the Spaniards found themselves masters of almost all New Mexico, whose centre was formed by the province of Tiguex, around which were grouped seventy-one towns distributed among fourteen provinces, viz.:—Cibola, which contained seven towns; Tucayan, seven; Acuco, one;

Tiguex, twelve: Cutahaco, eight; Quivix, seven; the Snowy Mountains, seven; Ximena, three; Cicuyè, one; Hemès, seven; Aquas Calientes, three; Yuque-yunque, six; Braba, one, and Chia, one. Besides these seventy-one towns, there were many others scattered outside this circle; as also several tribes living in tents.

In the spring that followed Coronado's visit to Quivira, the Commander-in-Chief set about preparing another expedition, with the object of making new discoveries; but, on the occasion of a festival, while he was "running the ring" with Don Pedro Maldonado, he fell from his horse; his adversary's went over his body and nearly killed him. This accident caused the general to alter his resolution, and inspired him with the desire of returning to New Spain, where he possessed large estates, to die quietly near his wife and children. The officers and soldiers, finding that the country was not so rich as they had been led to believe, and instigated by Coronado's secret emissaries, petitioned him to be allowed to return to Mexico; taking advantage of this disposition of his army, the general at once gave orders for departure, and returned to Culiacan in the month of April, 1543. Juan de Padilla, of the order of Saint Francis, preferred remaining at Quivira to preach the gospel to the Indians, and became a martyr. Brother Luis, of the same order, went to Cicuyè, but was never more heard of. Such was the end of this expedition, which, instead of having a favourable result for the Spaniards, only tended to arouse against them the profound antipathy of the natives, who had been very ill treated by the conquerors.

In 1581, a band of adventurers, commanded by Francisco de Leyva Bonillo, took possession of part of the province of Tiguex, and finding its productions, riches,

and inhabitants very like those of Mexico, they called it New Mexico.

In 1594, Count de Monterey, then viceroy of Mexico, sent the famous General Don Juan de Oñate de Zacatecas to take possession of New Mexico in the name of the king of Spain, and to establish colonies, forts, and missions there. In a short time the Franciscan missionaries succeeded in Christianising numerous Indian tribes who inhabited towns or villages which the Spaniards called pueblos, to distinguish those half-civilised tribes from those who, more savage or more independent, would not submit to the conqueror's authority.

For a long period the country enjoyed perfect tranquillity; the grounds were tilled, and the mines explored throughout this large territory; but in 1680, there occurred a general rising of the Indians with the object of shaking off the foreign yoke, and all the Spaniards who fell into the hands of the natives were unmercifully massacred. After several bloody conflicts and unexampled efforts, Don Antonio de Oternin, governor of New Mexico, was obliged to retire with his troops from Santa Fé seat, of the government. He stopped on the Rio Grande, where he fell in with some friendly tribes, who helped him to build the town which now bears the name of Paso Del Norte. It was only after ten years of a most obstinate warfare that Spain was able to reconquer New Mexico. Other insurrections nearly wrested again this fine province from the Spaniards; but none proved so fatal to them as that which broke out in 1680. An inveterate hatred exists to this day in the hearts of the Indians of this country against their former masters; the Mexicans who inhabit it are scarcely better liked; and the Americans, who now possess this state, — only very

recently, it is true, — will, with difficulty, find much sympathy there.

New Mexico, properly so called, is a very mountainous region: it is traversed in its centre by a great valley going from north to south, and formed by the Rio-Grande, formerly called the Tigeux. The average width of this valley is twenty miles; it is bounded on the east by the Sierra Blanca, the Sierra of los Organos, and the Sierra Oscura, and on the west by the Sierra of los Grullos, the Sierra of Acha and that of los Mimbres, which form the prolongation of the Rocky Mountains. These mountains measure, south of Santa Fé, from 6000 to 7000 feet in height, and on the north are descried peaks constantly covered with snow, which rise to 9000, and even to 12,000 feet above the level of the sea. The composition of these mountains consists, for the most part, of volcanic and granitic rocks, traversed by veins of sienite, greenstone, basalt and sandstone; they also abound in gold, copper, iron, and even silver mines. The auriferous ground covers an extent of more than 265 miles around Santa Fé, but it is scarcely explored. Near the Jèmez, — formerly Hèmèz, — towards the sources of the Rio Grande, there is a great quantity of coal and some gypsum, and the windows of the greater number of the houses are made of selenite instead of glass.

The sandy soil of the valley of the Rio Grande appears to be impoverished; but it is in general fertile, and in those places where irrigation is possible, it sometimes yields two crops a year. The inhabitants of New Mexico also rear horses, mules, sheep, oxen and goats. These animals are not generally of a fine breed, but they multiply very rapidly; and as they feed in the open air, they

prove a source of wealth, acquired with very little trouble. Lakes are numerous throughout this country: the Mexicans draw from them muriate of soda — common salt — which they use for domestic purposes.

It is close to one of these lakes, between the Rio Pecos and the Rio Grande, that the ruins of the Gran Quivira, which some writers believed were of Spanish origin, may yet be seen; but, as has been already stated, Coronado visited this town in 1542, in hopes of finding the treasures of which a wonderful account had been given him. Quivira, nevertheless, disappointed the conqueror's expectations; but it appears that, in the seventeenth century, this town became very rich and flourishing, and sent, twice a year, considerable quantities of gold to Spain. On one occasion, while the inhabitants were making preparations to transport, as usual, the precious metal they had gathered, they were attacked by the Indians, who massacred all the Spaniards. When those who were in the mines heard of this event, they hastened to bury their treasures, which amounted to 250 or 300 millions of francs (10,000,000*l.* or 12,000,000*l.*),* and took to flight; but they were also murdered, with the exception of two men who escaped to Mexico. In hopes of finding a certain number of adventurers who would go and fetch the buried treasure, they related their doleful story; but the distance which separated Mexico from Quivira appeared so great that no one would follow them. One of the two fugitives then left for New Orleans, which, at that time, belonged to Spain, and having assembled 500 volunteers, put himself at their head, reascended the Sabina, and traversed Texas. Nothing more, however, was ever heard concerning this expedition.

* Senate Documents, 1853.

Of late years some Americans and Frenchmen visited the ruins of Quivira to look for the famous treasure. They did not find it; but they discovered an aqueduct, the walls of a church, carvings mingled with the arms of Spain, and very wide wells, which doubtless led to the mines. It is probable that this town was destroyed after the general insurrection of 1680.

The climate of New Mexico varies according to the nature and the height of the table-lands. In the valley of the Rio Grande the heat sometimes rises, in summer, to 100° Fahrenheit. The winter is rather long, but not severe.

New Mexico is divided into three districts, the central, the north, and the south-east, formed by seven counties, in which are concentrated one hundred and two towns or villages. These divers agglomerations contain a population of more than 100,000 souls, not including the tribes scattered throughout the unexplored solitudes, and living in huts or in miserable cabins.

The central district has three counties, whose capital is Santa Fé. The first county is that of Santa Fé, which is the chief town of the populations of Santa Fé, San Ildefonso, Pajuaque, Nambé, Sienega, Cuyamanque, Tezuque, Rio Tezuque, Sieneguilla, Agua, Fria, Galisteo, El Real del Oro and Tuerto: in all, 12,500 souls. The second is the one of Santa Ana, chief town of the populations of Santa Ana, Bayada, Cochite, Peña Blanca, Chilili, Santo Domingo, Covero, San Felipe, Jèmez, Silla, Angostura, and Algodones: in all, 10,500 souls. The third is the one of San Miguel, chief town of the populations of San Miguel, Pecos, Gusano, Rio de la Vaca, Mula, Estramosa, San José, Pueblo, Puerticito, Cuesto, Cerrito, Anton-Chico, Cecalotè, Vegas, and Sepillo: in all, 18,800 souls.

The northern district has two counties, whose capital is Los Luceros. The first is that of Rio Arriba, chief town of the populations of Rio Arriba, Santa Cruz de la Cañada, Chimayo, Cañada, Santa Clara, Vegas, Chama, Cuchillo, Abiquin, Rito Colorado, Ojo Caliente, Ranchitos, Chamita, San Juan, Joya, and Ambuda: in all, 15,000 souls. The second is the one of Taos, chief town of the populations of Taos, Don Fernandez, San Francisco, Arroyo Hondo, Arroyo Seco, Desmontes, Pecuriès, Sineguilla, Santa Barbara, Zampas, Chamizal, Llano, Peñasco, Moro, Huerfano, and Cemmaron: in all, 14,200 souls.

The south-eastern district, whose capital is Valencia, is also divided into two counties. The first is the one of Valencia, chief town of the populations of Valencia, Tomè, San Fernando, Socoro, Limetar, Polvaderas, Sabinal, Elames, Casa Colorada, Cebolleta, Sabina, Parida, Belen, Luis Lopez, Lunes, Lentes, Zuñi, Acoma, and Rita: in all, 20,000 souls. The second county is the one of Bernadillo, chief town of the populations of Bernadillo, Isleta, Padilla, Pajarito, Banchós de Atrisco, Atrisco, Placeres, Albuquerque, Sandia, Alemeda, and Corales: in all, 8,200 souls. Among these towns, twenty-one, whose origin is anterior to the period of the conquest, are exclusively inhabited by Indians.

The principal Indian tribes who live outside this circle are: the Navajos, the Yampais, the Moquis, the Apaches, the Cosninos, the Tontos, the Coco Maricopas, and the Mojaves. The Navajos' country occupies an extent of about 15,000 square miles, comprised between the Rio San Juan, the valley of Tumecha, and the cañon of Chelly. Their hunting territory extends to the sources of the Gila. These Indians, numbering at least 10,000, cultivate, in beautiful vales, a little wheat, maize, and vegetables; but their greatest wealth consists principally in herds of cattle,

of sheep, and of horses. They manufacture blankets called *jorongos* in Texas, which are much prized throughout New Mexico, and cost from 150 to 500 francs each,—6*l.* to 20*l.*

West of the Navajos, in the delta formed by the two Colorados, are situated the seven towns belonging to the Moquis, viz. : — O-raï-bè, Show-mowth-pà, Mow-shaï-i-nà, Ah-le-là, Gual-pi, Shi-win-nà and Tè-quà, having a total of about 7,000 inhabitants. Between the Colorado Chiquito and the Rio Gila dwell two bands of Apaches, called Coyoteros and Pinal Leñas, reckoning 3,000 souls. Those Indians depend more for their sustenance on the plunder they make in the Sonora than on the produce of agriculture. The Cosninos live near the volcanic mountains of San Francisco, and even as far as the great Colorado. The borders of the Rio Verde and the range of the Aztecs are occupied by the Tontos. The Yampaïs's villages are situated to the west and north-west of the Rio Virgen, which falls into the Californian Gulf. Four tribes are concentrated in the valley of the Colorado, they are : — the Mojaves, numbering at least 4,000 souls ; the Chemehuevis, 2,000 ; the Yumas or Cuchans, 3,000 ; and the Cocopas, 3,000 also.

These Indians, particularly those of the pueblos of New Mexico, are generally remarkable for their sobriety and industry, the chastity of the women, the conjugal fidelity of both sexes, their integrity of manners, and their honesty in the ordinary transactions of social life. If these half-civilised populations are inferior to the ancient Mexicans in the development of the intellectual faculties, they are decidedly superior to them in the exercise of the moral ones. Notwithstanding wars, maladies, privations, and the destructive elements of all kinds that fell upon these un-

happy tribes, the *known* Indian population, disseminated between the 34° and 36° N. lat., from Fort Smith to the Gulf of California, is calculated to be above 149,800 souls, divided in the following manner:

Semi-civilised Indians on the borders of the Canadian	62,000
Savage	3,000
Wandering and barbarous	39,000
Indians of the New Mexican Pueblos	16,000
Navajos	10,000
Moquis	7,000
Pinal Leñas and Coyoteros	3,000
Tontos, Cosninos, and Yampaïs	6,000
Mojaves, Chemehuevis, Cuchans, and Cocopas	12,000
Paï-Utes near the Lake of Soda	300
Cahuillas of the mountains	500
	149,800

This figure is certainly inferior to the reality, and very small in comparison to the native population that formerly covered this immense territory. When New Mexico was discovered, all the country extending from Culiacan to the desert of Cibola, on one side, and to the Rio Colorado on the other, was but a succession of towns, villages and habitations joined together by cultivated fields, orchards, gardens and roads. But those great multitudes of human beings have almost disappeared since the conquest; the silence of the wilderness has succeeded to the joyful songs of the extinct populations, and the aridity of the desert replaces the primitive fertility of the soil. Wormwood and arthemise now grow where fields of rose-trees and of Indian corn formerly flourished; the cactus, the mesquite, and the dwarf cedar vegetate on the remnants of pines and fruit-trees reduced to powder by constant droughts.

The sun darts his perpendicular and scorching rays on the arid and bare rocks, which sparkle by day like gigantic diamonds. All this smiling nature, so lovely in bygone days, has retained nothing of its former glory but a melancholy beauty, not unlike the sickly hues of a flower washed by the waves of the sea.

CHAP. X.

SANTA FÉ. — FANDANGO. — CHURCHES. — VALLEY, TOWN, AND PUEBLO OF TAOS.—THE GOLD MINES.—REAL VIEJA.—PLACERS.—TUERTO.—SANTO DOMINGO.—VALLEY AND PUEBLO BELONGING TO THE JEMEZ.—RUINS IN THE SOLITUDES.—CAÑON OF CHELLY.—BERNARDILLO.—ALBUQUERQUE.—ACOMA.

SEEN from afar, the town of Santa Fé presents a most lovely aspect; low square houses are embosomed amid fields of maize, like small Italian villas nestled, tier above tier, on the slopes of the Apennines. A triple belt of mamelons, mountains, and variously-coloured meadows, frame in the town in a most graceful and picturesque manner. Here and there, too, clusters of yuccas, cactus, and helianthoïdes arise above the grass of the plain, as also a species of nyctaginea (*Nyctaginea oxibaphus*), which produces numerous deep scarlet flowers of admirable beauty, and almost unrivalled amongst the magnificent flora of the great deserts. But as you approach the city this delightful scene gradually changes, the charm vanishes, the houses become changed into pitiful cabins, the streets are quite loathsome, and exhale mephitic odours, and the wretchedly-clad inhabitants offer a most miserable appearance. Yet this outward display of poverty is not so much to be attributed to real indigence as to the population's own carelessness and indifference.

A large public square adorns the centre of the

town; its northern side is formed by the governor's palace, and the three others by merchants' stores. In the middle of the square the Americans have planted a big mast, from the top of which floats the starry banner of the United States. All the neighbouring *rancheros* assemble in this place to sell the produce of their farms and industry. All day long files of donkeys may be seen arriving there, laden with barrels of Taos whisky, bales of goods, forage, wood, earthen jars, melons, grapes, red and green pimentos, onions, pasteques, eggs, cheese, tobacco, and piñones (fruit of the pine), *Pinus-monophylla*). These piñones are generally baked in the oven, or roasted on cinders, as a means of preserving them better. Besides those provisions, the Santa Fé market also affords a great variety of bread and meat. The Indians of the pueblos, too, carry quantities of fish there, either fresh or dried in the sun. In the evening, after the *Angelus*, the square is filled with loungers, who chat, play, laugh, and smoke, until the hour for the fandango; for be it known, the young people of Mexico could not live if they did not dance at least 365 fandangos every year. At Santa Fé, as in Texas, and in all the provinces of Mexico, the women go to the fandangos, with their *rebozo* (mantilla), and arrayed in a light cool costume appropriate to the occasion and to the climate of the country; seated round the garden, or hall, where the dance is to take place, they smoke cigarettes and chat very loudly whilst awaiting the cavaliers' invitation.

The town also possesses two churches: one is the *Parroquia* (the parish), and the other *La Capilla de los Soldados* (the soldiers' chapel). The parochial one is a large heavy building, in the form of a cross; it is constructed of stone, and resembles, in every respect, the churches of

the small towns of Mexico. The front is ornamented with two square towers of singularly graceful effect, having three openworked stories, the last of which, imitating a crushed pyramid, supports a cross. Between the two towers is a kind of spire or steeple, embellished with a clock. The interior of this edifice is by no means remarkable; at each side of the high altar are two wax figures, as large as life, representing holy monks. Behind the altar the wall is bedecked with mirrors, old paintings, and hangings of the most gaudy colours.

The soldiers' chapel has been abandoned of late years; it is dedicated to Our Lady of Light (*Nuestra Señora de la Luz*). Above the principal entrance you see a basso-relievo, in stone, representing the Blessed Virgin rescuing a supplicating soul from the fangs of the Evil One; the angels surrounding Mary form a most interesting group. Heretofore the interior of this monument served as a kind of mausoleum, wherein dead bodies were laid; but one day the roof fell in, and as it was never restored, those who died wealthy were obliged to find another resting-place. Behind the grand altar of this church, there also exists a curious basso-relievo, composed of several figures: amongst others you remark the Blessed Virgin and St. James riding on Moors' heads; St. John, of Pomasan, standing on an aqueduct; St. Francis Xavier baptizing Indians; and St. Joseph, and St. Francis of Santa Fé, having each a funeral inscription, dated 1761, under their feet.

In New Mexico you often come across sculptures and paintings, which are most skilfully finished. The greater part of those works of art have been sent from Spain; but many Spanish, and even Mexican artists, contribute to the erection and embellishment of the churches of these countries.

To the north-east of Santa Fé, the solitary valley of Taos, which is nine miles in length, and almost equally wide, opens to the view. This picturesque district contains three important establishments: the town, the *ranchò*, and Pueblo of Taos. The town is situated at the junction of the two arms of the river which bears its name, at about one mile and a half from the south-eastern basis of the Rocky Mountains. Taos, like all the small cities of New Mexico, is but an assemblage of *adaube* houses built round a square. Its population is about 800 souls.

The rancho lies one mile south-east of the town, and at the same distance, and in the same direction, may yet be seen the famous Pueblo of Taos. This village, which is a curious remnant of the time of the Aztecs, has acquired a new amount of interest, owing to the tragic scenes that have passed within its walls of late years. One of the tributaries of the river, as it flows from the mountains, surrounds this delightful corner of the earth, which the Indians had chosen as a permanent dwelling-place. Each year new constructions were added to the preceding ones, the soil was improved, the population increased, and finally, Pueblo of Taos became one of the most important and strongest places of New Mexico. On each side of the watercourse, the Indians built one of those immense edifices, in the form of an irregular pyramid, which rise by gradations, until they attain a height of seven stories, and become a kind of impregnable citadels. These two kinds of forts, the church, and a few houses, complete the village, which is enclosed by a wall, covered in several places with a palisade of rude workmanship.

After the skirmishes of Cañada and of Ambuda, the insurgent Mexicans withdrew, on the 7th of January, to this stronghold, and determined to offer the Americans a

desperate resistance, in consequence of which the siege was long and bloody. Prior to this period Pueblo of Taos was besieged in vain for weeks together by multitudes of Indians; and it even withstood the attacks of the Spanish conquerors without being obliged to surrender.

Those sorts of fortresses which afford protection to the people of Taos are constructed, as we have already stated, of *adaubes*, that are almost proof against the enemy's projectiles. They have no exterior entrance save through the roof, which can only be reached by means of portable ladders. As they rise, each storey is smaller than the one beneath it, and is dexterously pierced with apertures that may be used as loop-holes, and thus render all approach to the town a very dangerous matter.

From Santa Fé you can also make an excursion to the principal gold mines of New Mexico, which are about thirty or forty miles south of the town. They are called the old and the new Placers. The auriferous region around Santa Fé appears to be very considerable; southward it extends upwards of one hundred miles, as far as the Gran Quivira; and northward it also stretches out one hundred and fifteen miles, as far as the river Sangre de Christo. On all the surface of this country gold-dust is gathered by the poor Mexicans, who wash it in the mountain torrent; but the old and the new Placers occupy the most hands, not only on account of the gold-dust which is to be found there in far greater quantities than anywhere else, but also on account of the mines which are now undergoing a thorough exploration. To go to these two Placers you should descend the Rio de Santa Fé to Sienequilla, traversing groves of cedars and pines, then you enter a very arid valley, where nothing grows save cactus, yuccas, and a miserable weed beneath which frogs

with horns and tails are hid. The environs of the Placer Real Vieja are very sandy; at every step you come upon masses of gritstone and enormous remnants of petrified trees. Real Vieja is a poor village of 200 inhabitants, who rear sheep. Formerly their flocks were very considerable, but the continual *razzias* made by the Navajos have reduced them to 5000 heads at most. Like their village, the inhabitants of Real Vieja have a most abject and wretched appearance, and yet it may be said that their streets are literally paved with gold. Along the borders of the torrents, and even in the centre of the village, turn what way you will, wherever you go holes are to be seen hollowed out by the miners, with the aid of a few bits of old iron which they use as mattocks; afterwards they wash the auriferous sand with water contained either in rams' horns or in a gourd. The miners work all day long, and in the evening they go about to different shops to sell the gold that they have gathered at the rate of sixteen piastres the ounce.

Between Real Vieja and Tuerto, situated a few miles more to the south, you pass close to the house of a Frenchman, who is the owner of mines from which he draws but little or no profit. He has three mills of simple and even rude construction, that are used to grind and pulverise the ore. Spangles of gold, visible to the naked eye, are there disseminated over quartz. Near these mills there also exist mines of native iron mingled with gold. The mountains that contain all those riches have a most wild and desolate aspect; they are of a pyramidical form, quite stripped of vegetation, and consequently leave the sandy nature of their soil unconcealed.

Tuerto lies at the foot of a mountain and on the borders of a ravine; it seems even still more miserable than Real

Vieja. Mounds of earth, drawn from the wells which are hollowed out for the purpose of extracting the ore, are heaped against the houses, so that this little town has quite the form of a village of gigantic dogs of the prairies. Its population is about 250 inhabitants, who are constantly occupied drawing, by means of great hooks, bags of sand from the wells; which sand is afterwards thrown into a pond or pool of water; then men, women, and children complete the washing of the ore in wooden porringers or in rams' horns. In gazing upon all those sunburnt, emaciated, and wobegone faces, one cannot refrain from pitying these possessors of gold mines; and then the life of the poor shepherds of the Llano-Estacado seems far preferable to that of the miners of New Mexico.

As you ascend the Rio Tuerto you come upon a lead mine, situated near the road that leads to San Antonio. Still further on, there are two copper mines, which also contain great quantities of gold and silver; and in the new Placer, that is quite close to the Rio Grande, the gold mines, being better explored, are much more productive. During the winter not fewer than 2000 persons go thither to work the mines. This periodical augmentation of diggers and miners is occasioned by the abundance of water, which is obtained by melting the snow, for otherwise the ore could not be washed.

Although the government demands a certain portion of the products of the soil, nevertheless, the auriferous territory may be considered as belonging to the whole corporation. When a Mexican wishes to explore a piece of ground that is as yet unowned, he goes to the Alkaid and offers to buy it: this functionary, according to the purchaser's means, yields him a portion more or less considerable, on condition that he will work the land every

year, or otherwise incur the penalty of forfeiting the concession.

Formerly foreigners were excluded from all right of obtaining grants of mines, but by taking a Mexican as partner they could evade the law and become purchasers. Since the annexation of New Mexico to the American Union, strangers have just the same privilege as the natives.

In 1850, the mines of Santa Fé had already produced one million of francs in gold dust or ingots. The analysis of the washed gold gives the following result:—

Native gold . . .	92·5
Silver	3·5
Iron or Silvex . .	4·0
Total	100·0

The value of all those auriferous grounds can scarcely be rightly estimated on account of the improvements which are daily introduced in the working of the mines: when those improvements become more general in New Mexico, the products of the mines will be considerably increased. Up to the present time none of the grantees have become rich, but many have ruined themselves, although pieces of native gold valued at from 3000 to 5000 francs have sometimes been drawn from the wells. Were it not for the incursions made by the Navajos, who devastate the country, flocks of sheep would prove a much more advantageous means of acquiring wealth. Yet, notwithstanding the almost certainty of their being carried off, herds of 4000 sheep belonging to the same ranchero may be seen on the banks of the Rio Grande.

Next to Santa Fé, the first important town of the south-

western deserts is Zuñi, ancient Cibola; when you have descended the valley of the Rio of Santa Fé as far as Sieneguilla, you cross that of Galisteo to Santa Domingo on the Rio Grande. Two roads diverge from this place and lead to Zuñi; one passes north-west, traversing the Navajos territory, and the other skirts along the Rio Grande as far as Albuquerque, and then goes directly to the west. These two roads deserve to be described.

The only remarkable objects to be seen on the route from Santa Fé to Santa Domingo, are a kind of cliffs of coarse sandstone, situated at the entrance of the valley of the Rio Grande; these cliffs are shaped in the form of columns with regular capitals, resembling the portico of an immense Egyptian temple in perfect preservation. A little northward of Santa Domingo, the Rio Galisteo flows into the Rio Grande; in this spot the river is nearly 300 yards wide, but it is very shallow, and runs mostly over a bed of moving sand, which is extremely dangerous for the carriages that have to cross it. The total length of the Rio Grande, from its sources to the Gulf of Mexico, exceeds 1900 miles, and its height at Santa Domingo is 5100 feet above the level of the sea. This pueblo is inhabited by Indians, called Kères or Quères; the houses are constructed of *adaubes*, and are two stories high, the second story recedes on every side, being, according to the Indian custom, narrower than the first; it is reached by means of movable ladders, which are drawn up at night and placed on the platform that serves at the same time as terrace and roof. A high parapet is placed all round these terraces to save the children from falling down, and also to shelter the inmates, who lurk behind it when forced to defend themselves against any outward enemy.

Santa Domingo possesses a circular store or close room thirty yards in circumference; the Indians assemble there to hold counsel, to dance, and to celebrate Montezuma's mysterious rites. The Catholic church of Santa Domingo is of simple architecture, but it is very rich, the panels of the doors have arms painted or carved on them, and the walls are covered with oil paintings, some of which are of great value. Above the altar is a very fine painting representing the crowning of St. James. Opposite to Santa Domingo, on the other side of the Rio Grande, you descry in the distance, a plateau 300 feet in height, on which are delineated the forms of ancient ruins, whose origin and situation greatly puzzle the imagination of the admiring traveller.

When you have crossed the river, you descend to the Rio of Jemez by passing through Covero and the Pueblo of San Felipe. You then ascend the Rio of Jemez, on the banks of which is situated the Pueblo of Santa Ana. The women of this village have the ludicrous habit of padding their leggings and drawers so as to give their legs monstrous proportions. The valley of the Jemez is very sandy, and the bed of the river, though nearly a mile wide, is generally without water; that which may be found here and there in a few holes, is of a deep red colour, and of a most disagreeable taste. The Indians have constructed little aqueducts (*acequias*) all about to irrigate their fields with the water of the Jemez; thanks to this expedient, they gather very fine crops of maize. After Santa Ana you ascend the Pueblo of Santa Isidoro, and you arrive at the one belonging to the Jemez. This Pueblo, like that of Santa Domingo, is built with *adaubes* instead of stones; the houses form three parallel streets; they present a most miserable aspect, notwithstanding

their being surrounded with orchards of peach and apricot trees. But if the habitations have the appearance of penury, nature, in return, has endowed this spot with the most beautiful scenery. The tablelands of the valley, being shaped by the rains, have their summits indented; their picturesque and fantastic forms stand out in a capricious manner on lofty hills and mountains, clothed in luxuriant verdure, which tower above their rear, producing a striking contrast with the yellowish surface of the desert. At night the air is impregnated with sweet odours, which transport, as it were, the human soul amid perfumed clouds of wild essences. The tempest howls and roars around, gusts of wind tear the leaves from the trees and scatter them in the solitude. All about you seem to be weeping and sighing, and yet those sounds do not proceed from living beings. During the storms of night, as in the calm of day, these regions, so marvellous by their sublime grandeur, seem to be the favourite sojourn of the genii, cherished children of the Indian imagination.

The Jemez, like the Indians of the United States, are passionately fond of dancing, and give themselves up to this diversion with a kind of frenzy. One feels quite astonished to find amongst this tribe the dance of the green maize, which is the most solemn of all, and which the tribes of Upper Missouri and Upper Mississippi perform amidst great public rejoicings previous to the gathering in of the maize. This singular fact strengthens the theory of some learned ethnographers who believe that the northern Indians, in point of origin and institutions, are of a somewhat common stock with the south-western tribes. The Jemez are a very hospitable race, and speak precisely the same language as the Pecos.

After an insurrection against the Spaniards, the Pecos, driven from their town, went immediately to ask the Jemez leave to live with them; the latter readily complied with their request, and even helped them to build their houses and till their fields. It was at the epoch of this forced emigration that the last priest who kept up the sacred fire at Pecos, having been seized upon, beaten, and carried off to prison, that fire, enkindled by Montezuma many centuries before, was extinguished for ever.

At a short distance beyond the Pueblo of Jemez you penetrate into the cañon of the San Diego, which is watered by a charming little rivulet; the two declivities of this cañon are very well cultivated, and produce fine crops of Indian corn, melons, vegetables, and various other kinds of fruit. By ascending the stream for about twelve miles you arrive at thermal springs, and close to those springs are the remnants of large furnaces which were formerly used for melting brass. This metal is quite common in the country; but for a considerable time the exploring of the mines has been totally abandoned, probably owing to the difficulty of working them. The thermal waters are boiling hot, and burst from beneath basaltic and calcareous ground; the principal spring yields about six pints of water per minute. In the same place you also see the ruins of a Catholic church, forty yards long by eighteen in breadth, with a rather low octagon tower. Going still deeper into the western solitudes the ruins increase in number. The first are those of the Pueblo Pintado, in the Sierra de los Mimbres, then those of We-je-gi, from whence you also perceive magnificent mountains, rocks piled one above the other, truncated cones, natural columns broken, and plateaux overgrown with cedars and pines. It is there that the desert

truly appears in all its grandeur. North-west of the Pueblo of We-je-gi is situated the Mesa Fachada, which is a very vast tableland, as smooth as a lake, and whose boundless horizon reminds one of the immensity of the ocean. You next enter the cañon of Chaco; on the northern summit of this deep glen are the ruins of eight other pueblos, lying at a distance of nine miles and a half from each other; judging from their dimensions, the principal ones would be the Pueblos of Hungo, Parie, Chetro, Ketle, Bonito, del Orroyo, and Señasca Blanca. The heart saddens at the sight of so many deserted towns which time is daily demolishing since their extinct populations lie smouldering in their silent graves.

On leaving the cañon of Chaco, you have to travel about forty miles over a wild and dreary country, after which you come out upon the valley of Tunecha. This valley is certainly one of the most curious of New Mexico. Here and there, at great distances between, are disseminated petrified woods, rocks of sandstone representing fantastic palaces, domes, spires, and pigeon turrets, &c. One would be inclined to take them for fairy constructions assembled in a virgin world by a charmer's hand; you are forcibly struck with the regularity displayed, and with the capricious forms of those singular objects, the more so as it is difficult to conceive how nature alone was able to accomplish works that tend so much to illusion. To the north of the valley you perceive, afar off, the three bluish peaks of the Ojos Calientes (thermal springs), which rise above the plain like three pyramids. Westward of the Sierra Tunecha, intercepted by the valley of the same name, stretches out the cañon of Chelly, a terrific labyrinth, through which it is almost impossible to

A CAÑON IN NEW MEXICO.

open a passage. The Navajos have often beaten in this place the Spanish and Mexican soldiers sent to chastise them for the continual depredations they commit in those regions and even as far as the left bank of the Rio Grande. The greater part of the rocks that rise above the cañon of Chelly are perpendicular; they are from 300 to 450 feet in height; many of them are frightfully undermined at their bases, either by the torrents or by some other unknown cause, and form prodigious vaults capable of sheltering thousands of men. Beneath one of these vaults are delineated the ruins of an Indian town, whose geographical position is at 36° 9′ 4″ N. lat., and 109° 42′ 3″ W. long.

To go to the Zuñis' territory from the cañon of Chelly, you direct your steps towards the south and descend the cañon Bonito, so called on account of its picturesque beauty and the delightful freshness of its atmosphere. This cañon is not quite forty yards in width; it is watered by a small stream of clear, limpid water, which flows at the feet of a double natural wall of red grit-stone, 360 feet in height. In the middle of this gorge is a curious sandstone column, forty-five feet high, which rises on a heap of isolated earth; at a distance it resembles a statue, and when near it looks like a large vase placed on a socle. On emerging from the cañon Bonito, you penetrate into the Zuñis' country, often traversing a great portion of the most curious and interesting deserts of the New World, it may be said, in the very bowels of the earth.

The southern road leading to Santa Domingo is also deserving of a short description. You first skirt along the left bank of the Rio Grande to Albuquerque by passing through Bernardillo, which is so celebrated for its

fine wines; you leave in the rear the Pueblo of Sandia, the inhabitants of which are proverbial for their honesty. Albuquerque is not as important a place as Santa Fé, but it is more central. Its population, including the neighbouring rancheros, is 2500 souls; the houses, constructed of *adaubes*, have only one story, and the town has nothing to distinguish it from the other cities of New Mexico. This locality is the richest and most fertile of all the valley of the Rio Grande; its vineyards, also, are the most prized. On crossing the river you perceive that the land rises slightly, then suddenly sinks, and continues to descend as you approach the San José, tributary of the Rio Puerco.

From the Rio Puerco you can visit the Pueblo of Acoma, which is the most ancient and at the same time the most extraordinary of the Indian towns of those countries. To arrive there it is necessary to go far into the solitudes of the south, across a wild and desolate district, where there is almost no other vegetation but yuccas and cedars. Ever and anon you meet with tawny coyotes (*Canis latrans*), whose ferocious looks cause one to shudder; then with flocks of sheep, kept by shepherds who are armed with slings, as in the time of the Aztecs; and with barefooted Indians driving donkeys laden with fruit and vegetables. Acoma is situated on an isolated rock which rises perpendicularly to a height of 360 feet above the plain, and appears like an island in the middle of a lake. The summit of this rock is perfectly horizontal, and its superficies is about sixty acres. To reach it you must climb over hillocks of sand, heaped up by the wind to a third of the height; the two other thirds of the route are hewn in the rock in the shape of a spiral staircase. In many places are to be seen enormous

congeries of sandstone (separated from the primitive masses by the action of time), and which have all the appearance of square towers erected round the pueblo to defend it.

The town is composed of blocks, each of which contains sixty or seventy houses, and a large Catholic church, with two towers and very pretty spires. The houses are three stories high, and have windows only in the upper one; in construction, they are quite similar to those of the other pueblos of New Mexico. The inhabitants of Acoma understand comfort; they seem happy, and are mild and generous. They generally wrap themselves up in white and black striped blankets, which are made by the Navajos; their trousers are very wide, and are fastened round the knee; long worsted stockings or leather gaiters complete their costume. The women, like those of Santa Ana, enlarge their legs in a horrid manner by means of wadded leggings.

Acoma is in all probability the Acuco spoken of by the ancient Spanish historians, which, according to them, was situated between Cibola and Tiguex, and built at the top of perpendicular rocks, whose summits could only be reached by means of 300 steps hewn in the rock, at the end of which steps was a kind of ladder eighteen feet high, also formed by holes cut in the rock. Although this pueblo was deemed impregnable, yet the inhabitants placed huge stones around it, that they might roll them down on any assailant who was bold enough to scale this extraordinary stronghold. Near the dwellings might be seen arable lands sufficient to grow the necessary quantity of maize for the wants of the population; also large cisterns to save the rain water. The Acucos were called banditti in all the surrounding provinces, into which they made frequent excursions.

Acoma, truly, puts one in mind of the fortresses met with by the army of Fernand Cortez; such as, for example, the village of Capistlan in the Guastepeque Mountains, described by Solis "as being a town fortified by nature, set on the summit of a huge rock. Access to this stronghold was so difficult, that the Spaniards could not reach it even by holding on with their hands. Many of those towns held out courageously against Cortez, who was forced to abandon the problematical conquest of them, lest he should see his entire army perish without being able to reach an enemy that could easily crush the assailants by rolling down enormous stones upon them."

CHAP. XI.

RIO OF SAN JOSÉ.— RITA.— LAGUNA.—NAVAJOS.— AGNA-FRIA.— HIEROGLYPHICAL ROCK.—RUINS OF THE OJO-PESCADO.—ZUÑI — ANCIENT ZUÑI. — LEGEND. — JACOB'S WELL. — MOQUIS. — PETRIFIED FOREST. — VOLCANO OF SAN FRANCISCO.—VALLEY OF THE WILLIAM.—CURIOSITIES. —THE COLORADO.—CHEMEHUEVIS.—MOJAVES.—THE MORMONS' ROAD.— LOS ANGELES.

In its course the Rio of San José successively takes the names of Rio del Gallo, Rio de Laguna, and Rio Rita. To penetrate into the country watered by the San José it is necessary to cross the Rio Puerco, and then to skirt along the river, keeping it always to the left; whilst on the right you follow a line of red gritstone cliffs, intermingled with thick layers of gypsum and white Jurasic sand. The delta traced out by the Puerco and the San José is formed by a series of flat woody hills. North of the San José the volcanic peaks of San Mateo rise to a height of 1200 feet. A few hundred yards beyond the Puerco the valley becomes contracted, and you discover, on a plateau of black lava, the ruins of an ancient Mexican city called Rita, which was abandoned by its inhabitants, owing to the continual attacks of the Navajos and the scarcity of water; for the San José being only a stream, its scanty waters are insufficient to supply the wants of a large population. The banks of the Rio are fresh and

fertile; in several places they are whitened by saline efflorescences. Farther on the valley gets still more confined, becomes a cañon, then widens anew, and Laguna appears in the intermediate space.

At sunset, when the luminous rays become softened, and render the hues more vague, more aërial and lovely, Laguna has the appearance of one of those old German cities on the banks of the Rhine perched on a mountain peak. The houses, with their graduated stories, seem piled one above another, producing the effect of an immense amphitheatre; the river bathes the foot of the eminence on which Laguna is built, and flows in tortuous windings through the plain. This Indian pueblo is one of the most ancient of New Mexico, and may still be seen in the same state as when the Spaniards found it in the sixteenth century. It contains about 1000 inhabitants, noted for their honesty, their sobriety, and even for their industry. In the centre of the pueblo is a square, wherein the Indians assemble to celebrate certain festivities, at which the Mexicans are not allowed to assist. Strange to say, those Indians perform the buffalo dance like the northern tribes of North America. The other religious ceremonies relate to Montezuma's worship. Near the square is a Catholic church where a Mexican priest officiates; this church, which is half in ruins, serves as a place of burial. From the top of the edifice you have a full view of the awfully grand cañon through which the river with difficulty winds its way. Thirty miles north of Laguna there exists a volcano; the mountain that conceals it is cut up with crevices, from whence columns of black smoke are continually bursting forth.

The Navajos often make incursions into this country, and take all they can lay hands on; they carry off entire

flocks, and even make prisoners, whom they only liberate on the payment of large ransoms. Yet the Navajos are not always at variance with the populations of the pueblos and prairies; at times they even pay friendly visits to some of the villages to exchange their products for other provisions. Formerly these Indians boasted that they could exterminate all the Mexicans, and that if they did not do so, it was merely to save themselves the trouble of cultivating the maize and rearing flocks.

On leaving Laguna you pass, six or eight miles south of Mount Taylor, an extinct volcano, reclining on horizontal beds of lava. The valley of San José then becomes very wide; in general, it is covered with lava. At one time the whole plain must have been inundated by the torrents proceeding from a mass of this semi-liquified substance of 100 yards in width by 30 feet in depth, and which afterwards became hard, black, and creviced, so as to afford a passage to the Rio. From Mount Taylor unto Agua-Fria, in the Sierra Madre, the land rises rapidly in the proportion of from 42 to 45 feet per mile. Agua-Fria is a tiny rivulet that springs from a bed of lava, flows for a while on the surface of the earth, and is afterwards lost in the volcanic rocks. It is the last rivulet of this latitude that directs its course towards the Atlantic; near the summit of the Sierra Madre it is 7800 feet above the level of the sea. On the route from Albuquerque to Agua-Fria you frequently pass through beautiful forests of pines and blooming plains, inhabited by black-tailed deer, antelopes, hares, squirrels, and all sorts of little birds arrayed in brilliant plumage.

Beyond the Agua-Fria you descend the western slope of the Sierra Madre, and reach a very open valley, wherein

may be seen the *rock of the inscriptions*, called El Moro by the Mexicans. The front of this rock, which faces the north-east, is vertical, and of a natural polish up to 210 feet of its height. On this side the basis is covered with Indian hieroglyphics and Spanish inscriptions; the opposite declivity has the form of a bastion, and possesses a spring of translucent water, which bubbles up at its feet from amid a circular basin surrounded by verdure. The summit of the rock is of white sandstone, slightly interveined with yellow; it is perpendicularly split in several places, so that at a distance it perfectly represents the turrets of a Moresque castle, from which circumstance it evidently derives its name of El Moro. Close to these turrets you can see the ruins of an ancient pueblo, whose walls betoken a certain degree of skill in the art of building; some of the walls, which are six or eight feet high, are still standing. Their masonry is perfect; the stones are small but regular, the timbers are of cedar wood, and appear to have been cleft with sharp stones rather than sawn or cut with iron tools. Remnants of handsome painted pottery, and points of arrows in obsidian are frequently found amidst the ruins. Beyond a deep glen opposite the El Moro the ruins of another pueblo are also to be seen. Some distinguished writers believe that those kinds of fortresses were erected by a race of shepherds to shelter themselves from the incursions of some wandering and savage tribes; but the regularity and beauty of these towers bespeak a more advanced state of civilisation than that of the shepherd population, and we can see by Acoma, Laguna, and other pueblos now inhabited, that it was a general custom among the ancient Indians to build their dwellings upon heights. All this country abounds in cactus, lichens, and

INSCRIPTION ROCK.

other plants, whose varieties are unknown in Europe, and even in the other parts of the American continent.

The valley of the Ojo-Pescado succeeds that of the El-Moro. The Pescado is a very pretty creek, which takes its source in a bed of lava, and contains a most peculiar species of fish. Formerly this source was enclosed by a wall, the remains of which still bestrew the soil. Near that wall are the ruins of two other pueblos, and so ancient are they, that the Indians themselves know nothing about the origin of them. These pueblos have almost a circular form and equal dimensions of 300 yards in circumference; in all probability they formed part of the kingdom of Cibola. A little more to the south you also perceive a deserted town, but which has only been abandoned within a short time; the Zuñis, who cultivated vegetables and corn in the valley of the Ojo-Pescado, inhabit this town during the summer. This country, almost as far as Zuñi, is destitute of all high vegetation, a few dwarf cedars and stunted pines grow here and there in the fissures of the rocks. Shortly after the Rio Pescado becomes lost in stratum of lava, and then reappears under the name of Rio-de-Zuñi. The district irrigated by this river, although of a dreary and desolate aspect, is nevertheless very fertile. On the right and left of the Rio are lofty cliffs of black metamorphic rocks, shaped into columns similar to the Giant's Causeway in Ireland: some of these columns are entirely separated from the principal mass, and remain erect like immense lighthouses at the entrance of the desert. In the middle of the valley the Pueblo of Zuñi rises on an eminence in the form of an amphitheatre, which, viewed from a distance, produces the effect of a peninsula. A few hundred yards south of Zuñi, there stretches out a plateau perpendicular

on every side, and in the centre of which is Zuñi Vieja (Old Zuñi). From time to time you perceive on the heights towers, wherein shepherds and cultivators keep watch lest they should be surprised by the roaming Apaches.

Zuñi is situated between 108° and 109° W. long., and 35° N. lat. It was only in 1694 that it became definitively conquered by the Spaniards, under the command of Captain-General Curro Diego de Bargas Zapata. Its present population does not exceed 2000 souls, for in 1852 the small-pox made terrible ravages there. A great many of the inhabitants have white skin, fair hair, and blue eyes. An ancient tradition accounts for this strange fact in the following way. Welsh miners having formerly gone into that region, they were all massacred by the Indians, who only spared the women on purpose to marry them. From those unions issued children bearing resemblance to their mothers, and this white race has been thus perpetuated to our days. What strengthens this tradition is, that we could cite numerous Zuñi words which are quite analogous to English ones, having just the same signification; yet the Indians deny this story, which does not do credit to their hospitality. The Zuñis have retained a profound veneration for Montezuma, and have even reserved a spacious yard in the middle of the town for their dances in honour of that demi-god. During those public rejoicings the dancers adopt grotesque costumes, mostly representing horned animals and ferocious or imaginary beasts.

The houses belonging to the Zuñis are of the same style as those of the other Indian pueblos; their graduated stories are almost all festooned with long garlands of red

pimentos, that dry in the sun. The town possesses a Catholic church thirty-three yards in length, by nine in width, it is built of *adaubes*, and behind its sole altar is suspended a painting representing Our Lady of Guadaloupe, the patroness of Mexico; a few statues surround the painting, but the lateral walls are completely bare. The governor lives in a house three stories high, wherein the Cazics or chiefs of the government frequently assemble. The Cazics are four in number, and their office is hereditary; the son succeeds the father when the latter dies, or becomes incapable of fulfilling his functions. They have the general direction of all public affairs, and have power to declare war or make peace; they name two of the chiefs captains, and consult them in all cases of urgency. One is the general who commands the armed forces, and the other is a kind of police officer. The latter goes among the people and makes choice of the most active and intelligent men, whom he presents to the Cazics for them to be named governors or inferior officers. If any one of them is too exacting or acts in a tyrannical manner, the people complain to the Cazics, who judge the offender, and divest him of his rank should he be found guilty. The Zuñis have a mania for taming eagles, which they catch whilst yet very young on the neighbouring mountains; multitudes of these birds are to be seen on the terraces of the houses, spreading their enormous wings as they bask in the sun.

To visit Zuñi Vieja you direct your steps towards a narrow gorge, situated one mile south of the pueblo; you traverse this gorge by a zigzag road that brings you to the foot of a lofty tableland; in this spot may be seen a sacred grotto, whither the Indians come to per-

form religious ceremonies. Then you have to begin climbing almost inaccessible rocks that rise 900 feet above the plain. Some of these rocks form a very wide projection, around which the Indians had formerly built a wall that they might lurk behind it during invasion, to throw all kinds of projectiles at the Spaniards. Arrived at the culminating point of the plateau you discover a smooth surface whereon grow large cedars; above these trees two very singular-looking columns rise up to a height of 495 feet. The following legend is attached to them. At a very remote period the Zuñis' ancestors came to the west from afar, and built the town that is still inhabited by their descendants. They were already a considerable time established there, when, on a dark night, the whole country was suddenly inundated; the floods rose with such rapidity that a portion of the population was buried beneath the waters, the remainder took refuge on the tableland, and there constructed the town which now bears the name of Zuñi Vieja. By way of appeasing the irritated spirit who had sent this calamity, they sacrificed to him a young man and a young girl, who were thrown into the deep. Immediately after this sacrifice was accomplished the floods withdrew. Before redescending into the plain the Indians erected, in honour of the two victims, those columns which have perpetuated to the present day the recollection of this great catastrophe.

Near these monuments, which seem to us to be the work of nature rather than that of man, you see numerous fragments of walls nine or ten feet in height and six in width, covering an extent of several acres. These walls are half concealed by tufts of immense cactus, and another shrub bearing a yellow fruit (*Opuntia arborescens*).

Among those ruins may be found remnants of painted pottery and points of arrows in obsidian, similar to those contained in the old deserted pueblos of New Mexico; such is all that now remains of Zuñi Vieja. Close to the town, in a cedar forest, may be seen many places set apart for the religious ceremonies of the Indians. They are kinds of oval altars in earth, between two and three yards long and very low, having at one of the extremities an arrow ornamented with feathers and a sort of network. At the other end, stuck into the ground, is a cedar stake carved in the open-work style; and in the middle of the altar, lying horizontally, is another bit of cedar wood carved in a similar manner; it is also surrounded with shells and arrows of small dimension. Some of those altars are of very remote antiquity, and the Indians allow no strangers to touch them.

All the valley watered by the Rio of Zuñi is very fertile and affords excellent forage, without being obliged to have recourse to artificial irrigation, as is customary among the Indians of other localities. The Zuñis save annually such an abundance of maize, that not only is there a sufficient quantity to supply their own wants, but they can even afford to export some to the west as far as Fort Defiance beyond the Rio Puerco.

Leaving this singular country behind, you traverse a mountain ridge and arrive at a plain in the middle of which is Jacob's Well, called Ouah-nok-aï-tin-naïe by the natives. It is a hole in the form of a funnel, 300 yards in circumference in its widest part, and 126 feet in depth. You descend to the bottom of this hole by means of a spiral staircase cut into the ground; it contains a pool of water surrounded by large brambles and briars. This well is one of the curiosities of the desert. North-west

of that region begins the Moquis' territory; this proud, independent, and illustrious nation has, of late years, seen its population considerably diminished by the small-pox, and although it is impossible to calculate exactly the number of Indians composing a tribe, nevertheless,—it is a positive fact, that in the present day the seven towns belonging to the Moquis scarcely contain 6000 inhabitants. Formerly that country was densely peopled to the Rio Colorado on the west, and as far as Chichilticale on the south; the traveller, who may visit it now-a-days, can scarcely go even a few hours' journey without coming across all sorts of ruins and remnants of painted pottery scattered over the soil.

Having passed Jacob's Well, by going always towards the Pacific Ocean, you leave, north-east, the magnificent range of the Sierra Madre Mountains, and southward, that of the Sierra Mogoyon, to enter the beautiful wide valley of the Western Puerco, which flows into the Colorado Chiquito (or little Colorado) at 110 miles more to the west. Few countries in the world can vie in beauty with the one enclosed between the Gila, the Colorado, and their tributaries, the Rio Verde and the Colorado Chiquito; this latter takes its source in the Sierras of Mogoyon and of Zuñi, and unites with the Colorado near the Great Cañon. From the Great Cañon the Colorado directs its course westward through a fissure that is above 1500 feet below the plain, it then descends towards the south until it makes its junction with the Gila, which forms the southern boundary of this vast region. Notwithstanding its elevation, and the vicinity of the Hammook-habi (the blue range), the Cerbat, Aquarius, Aztec, and Magellon Mountains of the Black Forest, and a multitude of cones of volcanic origin, the winter is never

severe in those latitudes, and the prairies which begin to reappear are quite humid, being watered by different streams.

In one of those uneven and diversified prairies flows a tributary of the Western Puerco called the Lithodendron, the banks of which formed of red sandy marl are bestrewed with ancient potteries. On those same banks may be seen a little forest of petrified trees, half buried in the marl and transformed into different coloured jasper. Some of these trees measure six yards in circumference by thirty-five in length. The greatest part of the branches are red, and the trunks are either brown or black, as if they had been burnt. Beyond the Lithodendron, the most important and the richest valley you come across is that of the Colorado Chiquito, which is thirty miles in breadth, with the most luxuriant pasturage in the world; unfortunately it is uninhabited. Porcupines, of a variety quite unknown in the other parts of the globe, have hollowed out their burrows near numerous petrified trees that are scarcely concealed by the high grass. Antelopes and black-tailed roebuck are almost the only living creatures that enjoy the riches and fertility of this uncultivated land. The river is rather narrow. At the time of Coronado's expedition the Spaniards called it Rio-del-lino, on account of the quantity of flax that grows on its borders; it runs towards the west-north-west, between two alluvial banks shaded by clusters of cotton trees. Close to the Colorado Chiquito is the Devil's Cañon, which is extremely narrow, deep, of a frightful aspect, and almost inaccessible; it serves as an entrance to two other valleys confined between thickly wooded hills that extend as far as San Franciso Mountains.

To the west of the Colorado Chiquito you traverse a very large prairie irrigated by the Rio Verde, in the middle of which rise cones of sandstone that appear like islets springing up from a sea of verdure. The Rio Verde takes its source at the foot of the San Francisco Mountains, over-runs several plains which it fertilises, is increased by the waters of the Salinas, and falls into the Gila near the village of the Coco Maricopas. Then for some time you pass close by the southern side of the peak of San Francisco, by walking over a kind of volcanic waves hardened and strewed with paps * of remarkable regularity; one of those paps had its ridge broken by a torrent of lava that formerly burst from it, and of which the tortuous folds are yet visible.

The volcano of San Francisco is very wide at its basis; the summit is formed by the union of many craters that rise 12,900 feet above the level of the sea, and are covered with perpetual snow. Its geographical position is between 111° and 112° W. long., and 35° and 36° N. lat. The flanks of this volcanic group are overhung with forests of pines (*Pinus brachyptera*), from sixty to ninety feet in height, with cedars, dwarf oaks, and shrubs (*Cowania sansburyania*), called *Altasina* by the Mexicans. The rocks are pierced with countless natural caves inhabited by the Cosninos. Nature has coated those caves over with a vitreous substance of a blackish-brown-like iron; the greater number have been artificially whitened and divided by partitions. Still farther on you find towers or observatories, and hieroglyphics engraved on the rocks. In all this region of extinct volcanoes the needle of the compass is very

* Small mamelons.

FALLS OF THE COLORADO CHIQUITO.

tremulous, and varies at every instant; at times even its direction is quite the contrary of what it ought to be. Consequently, not to lose one's way, it is necessary to pay more attention to the sun or to the stars than to the compass.

When you have left the San Francisco Mountains, you can easily descry towards the south those of the William, and to the north Mount Picacho, which you should leave to your rear; you next arrive at the Black Forest, situated at the foot of the range of the Aztecs. That country, so frequently visited by the Apaches during the winter season, contains an immense quantity of Mexican agaves, which the Indians roast and eat, but which the Mexicans distil to extract a very strong kind of brandy from them. Throughout America there is not, perhaps, a spot that would prove more favourable and advantageous to a company of agriculturists and of herdsmen than this portion of the great deserts comprised between the Black Forest, the Rio Verde, the Rio Salinas, and the Gila. The prairies are generally humid and require no artificial irrigation; the forests possess pines, fir-trees, cedars, and enormous oaks; the mountains contain considerable mineral riches, and tradition says that quantities of silver and gold are to be found there, and that several tributaries of the Gila roll golden spangles. But many years will yet elapse before the resources of that territory can be seriously explored by the whites, for, besides the difficulties resulting from the geographical situation of the country, the Indians, who are most zealous of their independence, would be sure to put forward every possible obstacle to hinder pioneers and fortune seekers from establishing themselves in their dominions.

The chain of the Aztecs is crossed opposite the Moun-

tain of Hope, on a low granitic ridge which seems to join the southern part to the northern range at 113° W. long., and 35° N. lat. Two streams gush from this height, one flows towards the east and takes the name of Rio Pueblo, the other directs its course westward and becomes a tributary of the William. From thence to the Aquarius Mountains the land is beautifully diversified, and goes in a rapid descent towards the Pacific Ocean, in the proportion of forty-five feet to every mile. All the rivulets wind their way in the direction of the south, and the plains through which they pass are clothed with a rich mantle of verdure that puts one in mind of the Emerald Isle. Torrents of cold lava are still very common there, but they are cut up by large fissures, or by cañons, and the valleys are shaded by numerous bouquets of willows and cotton-trees, particularly in the vicinity of the rivers. The Yampaïs inhabit those regions, and the fires of their encampments may daily be seen: when these Indians wish to parley they raise a firebrand in the air as a sign of friendship; most probably it was owing to this custom that the first Spaniards gave the Colorado the denomination of Rio-del-Tizon.

The magnificent valley of the William's River opens between the Cerbat and the Aquarius Mountains, which immediately follow the range of the Aztecs. Among the manifold curiosities of this valley we should cite the *Cercus giganteus* (doubtless the most colossal cactus of that family); generally speaking their summits attain from thirty to forty feet in height; yuccas of an equal size grow near this enormous vegetable. The flora of those solitudes is strange but of singular beauty, containing plants and shrubs that are nowhere else to be found.

CEREUS GIGANTEUS.

The form of the *Cereus giganteus* is that of fluted and vertebrated columns, with several arms rising in a parallel manner with the trunk. We must also notice the mountain sheep, the horns of which are of a prodigious size, and their wool exceedingly fine and silky. It is stated that when this quadruped is pursued by the hunters it throws itself from the top of a precipice in a peculiar way, so as to fall on its horns, and then gets up without having received the slightest hurt. In all probability it was with the wool of this species of sheep that the Totonteas wove the beautiful stuffs of which the Indians of the Gila spoke to Father Marcos de Nica.

Metamorphic rocks, either volcanic or of red sandstone, with the most ludicrous appearance, are piled up on each side of the William, as far as the Rio Santa Maria, where the valley changes its direction from north to south, and then winding, goes from east to west. Although you have only got a glimpse of the Rio Santa Maria, you must nevertheless leave it behind you, and continue to skirt along the river unto its embouchure in the Colorado, situated at 114° W. long., and 34° 15′ N. lat. According to an ancient tradition the constructors of the pueblos came from the north-west to the banks of the William; there they divided into two bands, one of which went by the San Juan and the Cañon of Chelly towards the centre of New Mexico, and the other established itself near the Rio Gila, from whence it was able to extend as far as Mexico.

In this part of its course the William winds through the mountains by a gap that is opened through a triple bed of greenstone, granite, and white quartz, containing an argentiferous gallery. This gorge is frequented by the Indians of the Colorado, so that you may often

fall upon traces of their encampments, such as pieces of nets wrought with the bark of the willow, liliputian huts constructed with branches of trees and then covered over with foliage. It is to be remarked that the Indians of those latitudes in lighting their fires only use very small branches about an inch thick, and even when wood is to be had in abundance, they show great parsimony in the quantity they burn of it. During very warm weather these savages often make their beds in the sand, which has been heated by the rays of the sun; but when the season is cold or rainy they sleep in little cabins filled with leaves or dried weeds.

Rocks heaped one above another represent the steps of an immense Mexican *teocalli;* their summits, notched by the storms, have the appearance of a Gothic indention of the thirteenth century; the crevices and fissures of those cyclopean staircases are fastened up with thick plants and extraordinary cactus. One of these perpendicular rocks is naturally hollowed out at its basis and forms a large grotto, at the commencement of which is a fine pond filled with clear running water; above the fountain the grotto is adorned with red, white, and blue hieroglyphics similar to those of the Rocky Dell, of which we have already spoken. A kind of serpent or rainbow envelopes the hieroglyphics, and seems to be the divinity of those localities. The singular aspect of this spot accounts for the Indians making choice of it as a sacred place wherein to celebrate their religious ceremonies; willows, mesquites, bindweed, and all kinds of shrubs and plants render it a sort of savage gallery, a sojourn of spirits and mysteries, which must have struck the fanciful imagination of those children of the desert.

On emerging from the gorge you enter the great valley

WILLIAM'S VALLEY.

of the Rio Colorado, which, flowing from the north-west, disappears through a large gap made amidst a mass of black mountains. At the mouth of the William the Colorado is about 250 yards in width, with a current of near three miles per hour. It waters an alluvial soil, which seems to contain less sand and a greater quantity of good earth than that of the banks of the Rio Grande. In ascending the Colorado you pass by the vale of the Chemehuevis, which does not exceed five or six miles in breadth by eight or nine in length. The eastern side is embellished with numerous villages, and cultivated fields, which extend to the opposite side. The Chemehuevis belong to the Pah-Utahs' nation, called Payuches by the Spaniards; in general they are a short, squat, and muscular race; their faces are usually painted black, and their only raiment is an apron; they grow wheat, Indian corn, kidney beans, peas, and other vegetables of the same kind.

Immediately after the Chemehuevis valley follows that of the Mojaves or Mohaves, which is remarkably fertile. These Indians are, perhaps, the only savages of the American continent who, having had scarcely any intercourse with the whites, have remained in the most primitive state of nature. They are intelligent and agreeable. The men are erect, and well proportioned, with regular features like those of the Europeans, large eyes, shaded with long eyelashes, and surrounded with blue tattooed circles; their sole garment is a short narrow apron, made of some cotton material, or of an animal's hide. The women's costume consists of a petticoat wrought with the inner fibres of the bark of the cotton tree, and which falls from the waist to the knee; some of them also wrap themselves up in fur cloaks. The young girls wear pearl

necklaces; when they marry they tatoo their chins with blue vertical lines, and put aside the pearl necklace for one made of twisted threads, at the end of which hangs a shell worked in a particular way. The custom of wearing these shells is very ancient, and the women are extremely fond of them. The most coquettish of the Indians paint their face black, and the warriors add a red line across their forehead, nose, and chin. Their left arm is adorned with bracelets of braided leather intermixed with white buttons, and they stick eagles' feathers, diversely pointed, in their hair. The chieftains hang turquoises and bone ornaments to their noses. All the Mojaves, the Cuchans, and the Maricopas have the cartilage of the nose perforated, but it is only men of distinction who wear rings in them. Men, women, and children spend two-thirds of the day on the roofs of the houses, chatting and playing the *dolce far niente*.

Opposite the principal village of the Mojaves the Colorado is nearly 500 yards in width, but it is quite shallow. You abandon it completely beyond this village, and go towards the north-west to the Soda Lake and the Mormons'-road. This part of the route is slightly undulating; it abounds in gravel, and is bestrewed with gigantic yuccas; still it is very monotonous. Here and there at long intervals you see rocks blackened by subterraneous fires, and covered with hieroglyphics. To the north may be perceived a range of volcanic peaks, above which you with difficulty espy the snowy summits of a lofty mountain. The transparency of the atmosphere is such in these climates that you can discover mountains at incalculable distances.

Before you reach the dried up bed of a lake which is covered with efflorescences of salt, or with sulphate of soda

(the Soda Lake), you traverse a wilderness of white sand, the surface of which is compact and hard. One hundred and ninety miles still farther on you fall in with the Mojaves River, a pretty little creek, which goes out of sight at times beneath beds of sand and gravel, and then reappears. It is close to this stream by 117° W. long., and 35° N. lat., that the road traced out by the Mormons begins, and which extends from the Timpanogos, or Great Salt Lake, in the Utah, to the Gulf of California. This route skirts along the Mojaves River during several days' journey, after which it goes directly to the west, at the same time rising rapidly to the Sierra of San Bernardino that stretches along the ocean. This range is crossed near Mount Gabriel, situated in the southern portion of the sierra; you then descend to the opposite plain by a declivity, varying from 550 to 600 feet to every mile. The Mormons have established a very excellent sawing-mill at the foot of those mountains; they make planks with the oaks, pines, and sycamores that grow in the ravines, and also with the fine firs of the San Bernardino. From the basis of Mount Gabriel to the sea there is nothing to be seen save a sloping plain irrigated by rivulets, on the borders of which are upwards of 500 farms, drawn up in échelons, and which are tilled by Mexicans and Americans from California. In the centre is built the Mexico-American town of Los-Angeles. This city affords but little interest; its population is calculated to be from 4000 to 5000 souls. To go from Los-Angeles to San Pedro, the first port of that country, you have merely to follow the course of the San Gabriel, which leads you by an easy descent, beneath a delightful sky and amid perpetual verdure, to the shores of the Vermilion Sea, or Gulf of California.

CHAP. XII.

FIRST EXPEDITIONS TO CALIFORNIA. — FORTUÑO XIMENES. — FERNAND CORTEZ. — RODRIGUEZ CABRILLO. — DISCOVERY OF CALIFORNIA. — SIR FRANCIS DRAKE. — THE RECEPTION HE MET WITH FROM THE NATIVES. — OTONDO'S EXPEDITION. — FATHER SALVA TIERRA. — THE JESUITS. — FATHER ZUNIPERO. — BAY OF SAN FRANCISCO. — UPPER CALIFORNIA. — SUNSET ON THE PACIFIC OCEAN. — PRODUCE OF CALIFORNIA. — THE SAN JOAQUIN. — THE SACRAMENTO. — GIGANTIC TREES. — THE INDIANS. — THE SIERRA NEVADA.

To complete the description of the southern deserts of America, we must give a few details concerning the discovery and the topography of California, which is situated to the west of the regions of which we have spoken in the preceding chapter.

In 1523 the Emperor Charles V., by a letter dated from Valladolid, ordered Fernand Cortez to seek out on the eastern and western coasts of New Spain a passage that would lead to the East Indies. In his reply to the emperor, Cortez speaks in a most enthusiastic manner of the possibility of effecting so desirable a discovery; it would seem that he even made many attempts with the hope of finding such a passage. What is quite certain is, that in 1534 Cortez equipped two ships, one of which was put under the command of Hernando Grixalva, and the other under that of Diago Becerra de Mendoza. Those two captains received orders to continue the explorations already made along the shores of the Gulf of California, and to do all that lay in their power to find

out what had become of a vessel belonging to the state, which had previously sailed, and of which no tidings had been received.

The very first night of their departure from Téhuantepec, on the Pacific Ocean, the two ships were separated never more to meet.

Grixalva, after having espied on the coast of California a deserted island, to which he gave the name of St. Thomas, returned to New Spain. Becerra de Mendoza, whose character was haughty and passionate, was assassinated by his crew, at the instigation of the pilot Fortuño Ximenes. The latter, after the captain had been murdered, took the command of the expedition and continued the voyage, directing his course towards the north. Reaching the peninsula of Old California, he gave the name of Santa Cruz to the spot where he cast anchor, and which in all probability was the Bay of Paz, situated on the western shore of the Californian Gulf. But he did not long enjoy the success of his enterprise; for, in his turn, he was assassinated, with twenty other Spaniards, by the natives of that country. Some Mexican manuscripts affirm that California was discovered in 1526, but they give no proof in corroboration of this assertion.

In the year 1535 Fernand Cortez visited the two shores of the Californian Gulf, first called the Sea of Cortez, then the Red Sea, and finally the Vermilion Sea; the name which it still bears, and which was evidently given to it on account of a certain likeness between it and the Red Sea of Arabia and Egypt, or on account of the reddish colour imparted to it by the Rio Colorado, towards its northern extremity. During the two following years Francisco d'Ulloa continued his voyages of exploration to the mouth of the Rio Colorado, but did not pene-

trate as far as Upper or New California; that honour was reserved for a Portuguese named Juan Rodriguez Cabrillo, one of Fernand Cortez's pilots.

On the 27th of June 1542, Cabrillo, in compliance with the orders and instructions given him by Antonio de Mendoza, Viceroy of New Spain, sailed from Naturdad, Mexico, to explore the north coasts. He discovered the large cape situated between the 40° and 41° of N. lat., and called it Cape Mendoza, in honour of the viceroy. He then made a *reconnaissance* as far as the 44° N. lat., but, exhausted by maladies and fatigue, he returned to Naturdad. This account is taken from Venegas. But other writers say that he died at Port Possession, in the Island of St. Bernard, in the little Archipelago of Barbara.

In 1577, Sir Francis Drake, who was then merely a captain, though already a most distinguished navigator, prepared, with the help of a few friends, a buccaneering expedition against the Spaniards, the accomplishment of which plan induced him to go round the world. It is a well known fact that the great wealth of the Philippine Islands was annually transported in a galleon, which sailed from Manilla and stopped at Acapulco previously to its sailing for Europe. The capture of this galleon was the object to be attained by those expeditions organised with the permission of the government. Drake then set out with the view of making this important seizure. Crossing the Straits of Magellan he arrived off the coast of California in 1579, after pillaging every ship he met with during his route, and sacking all the new Spanish establishments that were near the shore. Fancying that he was the first who had discovered this land, he called it New Albion. He cast anchor in a bay which some authors take to be that of San Francisco, but, according

to more exact information, we believe it to be the one known in the present day under the denomination of Jack's Harbour, which is a little more to the north.

The inhabitants of the countries discovered by Drake lived in huts, that sheltered them from the inclemency of the seasons. The men wore no garments whatsoever, and the women had, by way of petticoats, little aprons similar to those worn by the Mojaves of our days. The savages brought the captain feathers, head-dresses of network, and tobacco. His arrival was soon known throughout the neighbourhood, and the natives announced to him that the king of a great nation desired to see him, provided assurances were given that he should receive no injury. Drake made them understand, in the best way he could, that the king would be most welcome. Shortly after the buccaneers beheld a numerous band approaching them, at the head of which walked a man of noble appearance, bearing a stick by way of a sceptre, from which hung two crowns made of feathers and three gold chains. The king came immediately after, surrounded by a crowd of men of imposing stature, clothed in the skins of animals. A multitude of savages terminated the *cortége;* they were painted with divers colours and laden with all sorts of presents. The sceptre-bearer made a long speech, which was followed by general dancing and ludicrous songs. Then the king advanced towards the English captain, and, placing one of the two crowns on his head, made over his kingdom to him, which Drake readily accepted in the name of his sovereign.

We do not dare to vouch for the veracity of this part of Drake's narrative, which may have been invented to secure, in case of necessity, that territory to the crown of England. Be this as it may, the English advanced

into the interior of the country, where they saw rabbits running about by thousands. On their return, they affirmed that the country they had just visited must contain abundance of gold, because quantities of it were to be found in several spots. If this be the case, does it not seem extraordinary that the natives wore no ornaments made of this precious metal? This fact, as well as the nudity of the savages, would prove that they were in a complete state of barbarism, and ignorant of the most simple elements of metallurgy. Is it not also surprising that the queen, who recompensed Drake by conferring knighthood upon him, assuring him, at the same time, that his deeds would render him more honourable than his title, should have adopted no measure to secure the country which her admiral was reputed to have discovered?

At a later period Cavendish and Rogers visited these latitudes, and the description these navigators give of the inhabitants is in perfect accordance with that of the tribes of the present day that are to be found within these vast solitudes.

In 1599, Gaspar de Zuniga, Count de Monterey and Viceroy of Mexico, organised another expedition in compliance with the orders he had received from Philip II. king of Spain, with a view to discover new countries, and to found establishments on the coast of California. General Viscania, to whom the command was confided, left Acapulco in the year 1602, and reached as far as the 42° N. lat. During the route he put into two magnificent ports, to which he gave the names of San Diego and of Monterey, in honour of the viceroy. Shortly after Zuniga's return, ambition excited the emulation of the Government and of private individuals; for the interior of California was already reputed very rich in gold and silver mines, whilst

it was rumoured that the shores and gulfs possessed pearls of great beauty and of considerable value. Consequently, official and private expeditions were frequently attempted from 1615 until 1668, but they led to no important discovery. At last, in 1677, orders were issued by the court of Madrid for Don Francisco Payo Enriquez de Rivera, Archbishop of Mexico and Viceroy of New Spain, to conquer all California, and to take possession of it. The command of this enterprise was conferred upon Admiral Don Isidoro Otondo y Antillon. The spiritual government of the province was confided to the Fathers of the Society of Jesus, in consequence of which Father Eusebio Franços Kühn received the title of Provincial-Superior. Otondo and the Jesuits sailed from Chacala in May 1683. During two years the expedition succeeded perfectly both in a moral and a material point of view, and the Jesuits converted several to Christianity. Nevertheless, the difficulty of supplying the enormous expenses required to support the conquerors and the colonisers prevented those establishments from acquiring a fixed character of prosperity and duration. Spain then, exhausted by the continual sacrifices it made to sustain all those attempts at colonisation, committed to the Jesuits the care of achieving the conquest of the province, of which they were the civil as well as the spiritual governors. But the latter declined the offer: yet not wishing to abandon the Indians to the errors and darkness of idolatry, Fathers Kino and Salva Tierra devoted themselves to their spiritual welfare, and were the first apostles of California.

We find it necessary to give here a sketch of the difficulties which the missionaries had to encounter in their admirable efforts to civilise the natives of the newly discovered provinces. Father Salva Tierra, desiring to con-

secrate himself to the mission of California, repeatedly solicited permission to go thither, but the three provincials to whom he had successively addressed his request refused to grant it. The Audience of Guadalaxara and the viceroy also opposed it, as the treasury was exhausted, and Otonda's unfortunate affair as yet so very recent. In short, even the court of Madrid objected to it, notwithstanding the representations made by Father Salva Tierra to his Majesty, through the medium of his Council of the Indies. But the zealous missionary was by no means disheartened. He again besought the Father-General of his order to grant him leave to undertake this mission, and after long opposition his superiors at length yielded to his pious solicitations. On the other hand, the Audience of Guadalaxara began to see things in a different light, and entered so completely into his views that the Solicitor, Don Joseph de Miranda Villizan, became his most devoted friend, and seconded him with all his influence. On the 16th of July 1696, the latter presented a petition to the Audience, requesting it to favour Father Salva Tierra's mission, in consequence of which a letter was written to the viceroy, recommending the matter to him.

The pious missionary went to Mexico in the beginning of the year 1697, with full power from his superiors to make the necessary collections for this enterprise. There he met with Father Ugarte, who undertook to be his agent at Mexico to remove whatever difficulties might arise in opposition to the Californian expedition. Some time after, Don Alonso Davalos, Count de Mira-Vallez, and Don Matteo Fernandez de Cruz, Marquis of Buena Vista, promised him two thousand German crowns, which donation, joined to the liberalities of other benefactors, rose to a sum of fifteen thousand crowns. Don Pedro de la Sierpe,

treasurer of Acapulco, offered to lend a galliot to convey Father Salva Tierra and his suite, and made them also a present of a barque. But as they could not rely upon the success of the undertaking for want of funds which would afford them an annual revenue, the Congregation of Our Lady of Sorrows of Mexico gave eight thousand crowns to found a mission. To this sum it afterwards added two thousand more, having calculated that a revenue of at least fifty crowns was required to enable the missionaries to subsist, on account of the great distance of the country and the few resources that were to be had there. Besides this, Don Juan Cavallero de Ozio, a priest of the town of Queretaro, and Commissioner of the Inquisition, a very wealthy and most generous man, gave two hundred crowns to establish another mission, and promised Father Salva Tierra to honour all the checks he would draw on him. These happy beginnings encouraged the Jesuits to ask the viceroy, Count de Montezuma, a gentleman of New Spain, to grant them the permission they required for their enterprise. The Father-Provincial, John de Palacios, presented a very judicious memorial on this subject. At first he met with great opposition in the council; but after various remonstrances, on finding that he asked nothing of the king, whom Otondo's expedition had cost 225,400 piastres, he obtained leave on the 5th of February 1697. By the order despatched to Father John Maria de Salva Tierra, he was allowed, as likewise Father Kino, to repair to California on two conditions, one being not to disturb anything whatsoever belonging to the Crown, nor to draw on the treasury without express order from the king, and the other to take possession of the country in his Majesty's name. They were empowered to raise troops at their own expense for their personal protection,

to name a commander, and to dismiss him as well as the soldiers, by notifying it to the viceroy. Finally, the fathers were authorised to nominate all such persons as they might judge proper in the newly conquered country.

Father Salva Tierra, having thus obtained all he had solicited, hastened to leave Mexico; and, having committed to Father Ugarte the care of collecting alms and taxes and transmitting them to him *viâ* Acapulco, sailed on the 10th of October 1697, with a few soldiers and three Indians. After three days' navigation they entered Conception Bay, and disembarked in that of St. Dionysius, as it afforded the best anchorage. Fifty Catholic Indians went to help Father Salva Tierra and his companions in effecting their installation; and the zealous missionary, after having provided for the first cares of the establishment, set himself eagerly about studying the language of the savages, and then devoted himself entirely to their religious, moral, and material well-being. Father Kino assisted him greatly in this work of civilisation, and notwithstanding the jealousy shown by the Indian priests, who saw their influence gradually diminishing, despite the revolt of some populations that wished to destroy the new establishment and to kill the missionaries, notwithstanding also a terrible famine, during which the missionaries were near perishing, the zeal of those apostles was crowned with complete success. Their mission flourished, several other Jesuits joined them, and considerable donations having been made, they were enabled to propagate, throughout the greater portion of the land, the light of the Gospel and of civilisation. The Viceroy of Mexico sent soldiers to protect them, and catholicity was very soon spread throughout the peninsula.

Charles III. having issued in 1767 a decree by which

the Jesuits were expelled from the Spanish territories, the temporal and spiritual government of California was withdrawn from them; a government which they had conducted up to that epoch with as much intelligence as devotedness. Franciscans and Dominicans succeeded them, and still live in Lower or Old California. The first mission erected in Upper or New California was created at San Diego by Father Junipero Serra, of the order of St. Francis. An old chronicle attributes to this friar the discovery of the bay of San Francisco, destined to become so celebrated in after years. Desiring to return to Monterey, Father Junipero followed the range of mountains that border the northern coasts of San Diego, where he had just founded a mission. He passed by Monterey without perceiving it, and arrived at the bay of San Francisco, to which he gave the name of the founder of his order. According to the annals this is the way in which that name was given to this port. As he was about to return from Lower California, Father Junipero received instruction, from the Inspector-General, concerning the names of the saints that were to be given as patrons to the new missions. The name of St. Francis was not on the list. "What," said the good missionary, surprised at this omission, "is there to be no mission dedicated to our dear founder, St. Francis?" To which the inspector replied: "If St. Francis wishes for a mission, let him find a good port for you, and then you can call it after him." The first harbour discovered after this conversation was the magnificent bay of San Francisco, and the ecclesiastics on seeing it, at once exclaimed in a transport of joy: "Behold the port the inspector desired, and towards which St. Francis has led us: blessed be his name!"

An Indian tradition assures us that this bay was at first

a lake of fresh water, and subsequently joined to the sea by an earthquake. From the moment of its discovery, San Francisco had the reputation of being one of the best harbours in the world; it is also renowned for the picturesque beauty and fertility of the surrounding countries, and for the mildness and salubrity of its climate. Its geographical position, opposite Asia, and at the mouth of two great rivers, which traverse a territory abounding in corn, in flocks, and in timber for building, probably the most gigantic to be found, considerably augments its importance, and promises it a brilliant future, already partly realised by the numberless immigrations of gold-seekers, of merchants, and of colonists. The bay of San Francisco is separated from the sea by a chain of low mountains with a gap towards the centre one or two miles in width, which is the only communication between the bay and the sea. The total length of the bay is 71 miles, and its circumference at least 220. Islands and rocks, some of which are very elevated, appear gracefully above the water, and add to the magnificence of its grand scenery.

Upper California extends from south to north, from the 32° to the 42° of N. lat. Its length, from the Sierra Nevada to the Pacific Ocean, is about 150 miles in its southern portion, and 200 in its northern one, giving a superficies of 108,750 square miles. Numerous little valleys, agreeable and fertile, with a mission established in each, ascend from the sea-shore into the interior of the country. The mountains that separate them from each another are of an average height of 2100 feet. When it is remembered that this region has an extent of ten degrees, notable differences of climate would naturally be expected; nevertheless, strictly speaking, neither winter

nor summer reigns there, and the months that correspond with these seasons are rainy or dry, but never very cold nor very warm. The rains commence about the end of November, and finish about the beginning of May; between those two epochs are the finest and mildest days of the year. The drought of summer is in general modified by mists and abundant dews that fertilise the earth, in consequence of which immense districts are to be seen covered with uncultivated oats, on which countless wild and tame animals feed.

The finest valleys in California are those of the San Joaquin and of the Sacramento. These two valleys, which properly speaking only make one, are bounded on the east by the Sierra Nevada, and on the west by the mountains that extend along the ocean. In the evening, from the summit of those mountains, you may behold the grandest spectacle that the creation can offer to the gaze of man. To the west, the sun, as it sets above the sleeping ocean, casts a crimson hue in the immensity, and sheds a fiery twilight over the motionless sea. No vapour covers the surface of the waters, whilst sparkling clouds illuminate, with soft gilded beams, the polished sands of the shore. To the east, the snowy peaks of the Sierra Nevada become gradually tinted with all the colours of the rainbow. Long black lines indicate the course followed by the torrents that flow into the two rivers. The sea winds whisper gently, or blow with fury, in the forests of oaks and gigantic pines. These mighty children of the earth brave the terrible shock of the south winds without breaking, and their stalwart branches, bent by the northern blast, arise anew, groaning beneath their weight. Melancholy voices sigh in the heavens and in the woods. In the plains you descry the reddish fire of the Indian encampments, and you hear the

monotonous chants of the savages; those chants, repeated by the echoes, resound like the whistle of a storm on the summits of the mountains, and are lost in space. Some tardy birds ascend from the humid herbage and flutter in the shadows of darkness, at the same time sending forth a plaintive cry. The shades, the night, the dew, and the balmy tepidity of the atmosphere, intoxicate the senses. All this ethereal poesy of a sublime harmony enraptures, transports the spirit into regions unknown and luminous, wherein the whole being hovers amid a sphere of delights, of joys, and of holy ecstasies. Each note of this melody of nature imparts a vivid impression, and vibrates magically in the soul, like the sublime sonatas of Beethoven and the touching strains of Bellini. In the midst of these divine concerts, capriciously modulated in the solitudes, man recognises the majesty, the omnipotence, and the greatness of God; and the soul, affected and amazed, is elevated to the Eternal by the contemplation of His most admirable works.

Few countries are endowed with so lovely a sky, such pure air, and so mild a climate as Upper California. It is the Italy of the New World. Apple, pear, plum, fig, orange, peach, and pomegranate-trees grow beside palm-trees, banana-trees, the cocoa, and the sugar cane. The olive oil of California is similar to that of Andalusia, and the wine that was formerly to be had there might have vied with the most *recherché* of the Canary Islands; but since the ancient missions have been abandoned, scarcely any of those fruit-trees which were planted by the Jesuits all over that territory are to be found: yet at St. Bonaventure, and at the mission of San Luiz Obisbo (35° N. lat.), you may still see olive-trees whose fruit surpasses both in size and in quality all those of the basin of the Mediterranean. The productions of the south differ from those of the centre

and of the north. Grapes, olives, maize, wheat, tobacco, potatoes, cotton, and vegetables, which are of an ordinary size in the United States, assume extraordinary proportions in California.

The San Joaquin and the Sacramento derive their sources from the two extremities of the long valley of which we have already spoken. Having received many tributary streams, some of which are even fine rivers, they become navigable, are united by several arms towards the 38° 15′ of N. lat., and shortly after fall into the bay of San Francisco, by passing through a large gap made in the mountains of the coast.

The valley of the San Joaquin is nearly 300 miles in length by 30 in width. The eastern side, backed by the Sierra Nevada, is the finest of all. It is watered by numerous rivulets which fertilise the shoals, coquettishly shaded by a multitude of white oaks (*Quercus longiglanda*), from fifteen to sixteen feet in circumference, by sixty to ninety in height, and by large sycamores (*Platanus occidentalis*). The San Joaquin flows from Lake Tularé, situated to the south of the valley. The principal tributaries of the San Joaquin are: the Rio de los Cosumnes, the Rio de los Mokelumnes, the Rio de los Calaveas, the Rio Stanislas, the Rio de los Towolumnes, and the Rio de los Auxumnes. These names are, for the most part, those of the savage tribes who lived on the borders of these rivers, and whose only sustenance was derived from the acorns of the white oaks, which are from two to three inches long, and from a kind of geranium (*Erodium cicutarium*), considered a very nutritious plant, and which is still consumed by the Indians of our days. The hills situated at the foot of the Sierra Nevada remind you a little of the high prairies of Texas; for, like them, they are un-

dulating and woody, and afford the most favourable spots of all the valley for agriculture. The environs of Lake Tularé possess a truly beautiful flora; among which we distinguish the *Viola chrysantha*, the *Eschscholtzia californica*, and the *Nemophila insignis*. Flocks of elks, of antelopes, of wild horses, some grey bears, multitudes of turkeys and other species of the gallinaceous tribe, fatten amid the rich pasturages that adjoin the shoals.

The Sacramento takes its source north of Upper California, in the neighbourhood of Mount Shastl or Tsatkl, whose summit, whitened by eternal snows, rises into the air to a height of 14,400 feet above the level of the sea. It then directs its course, for a distance of 300 miles, towards the south, and after receiving the waters of different streams,—of the Bute River, of the Rio de las Plumas, or of the Eldorado which descends from the auriferous regions of the Bear River, and of the Rio de los Americanos that washes a portion of New Helvetia,—joins the San Joaquin, as we have already stated, and flows into the bay of San Francisco. The river abounds in salmon celebrated for both size and flavour. The valley of the Sacramento is also of prodigious fertility. Countless fruit-trees are there to be found; flax and hemp cover the prairies, whilst oaks and pines attain proportions truly extraordinary. You also frequently meet with white cedars (*Thuya gigantea*) 150 feet high, and cypresses (*Taxodium*) which the Mexicans call *Palo Colorado*, and which are ten yards in circumference, by 270 feet in height. Near Monterey, the *Palo Colorado*, which might well be named the king of the Californian vegetation, becomes even still more colossal than on the western declivity of the Sierra Nevada. This territory, in fact, possesses all the necessary elements to make California a great maritime country.

We say nothing of the auriferous regions, nor of the gold dust that is rolled along by the waters of the torrents and rivers, as many others have written on that subject. Silver, mercury, coal, iron, sulphur, and asphalt have also been found in abundance over this favoured land, but they are neglected for the gold diggings, which are more productive, and prove a much easier means of acquiring riches than the working of the other minerals.

The Indians of California consist of poor tribes, living wretchedly on the products of fishing, of hunting, and on wild fruits. Under the intelligent and paternal administration of the missionaries they had become happy, docile and industrious, even though their intelligence was much inferior to that of the other Indians of North America. They tilled the fields, cultivated the vine, and had very fine orchards. Previously to the arrival of the Jesuits, they were in complete ignorance of the arts of agriculture and even of the pastoral life; stupidity seemed to be their distinctive character. They now dwell in miserable huts of the form of hives, the greater number being quite naked; and they still till the ground, but they derive their principal food from the chase, from fishing, and from acorns.

The Sierra Nevada, of which we have already spoken, forms part of the great mountain chain which, under different names, at unequal heights, but in a uniform direction, spreads from the Sierra de San Bernardino to Russian-America, affording no other apertures than those through which the Columbia and the Fraser flow into the Pacific Ocean. This range is remarkable for its extent, its parallelism with the sea-shore, its volcanic peaks, and the elevation of its mountains, some of which rise above the highest summits of the Rocky Mountains.

The greatest part of these peaks, isolated like pyramids, are placed on immense *plateaux*, overgrown with magnificent forests, and stretching as far as the frozen regions of eternal snow, and rise to 12,000 and even 17,000 feet above the level of the sea. The Sierra Nevada exercises a visible influence on the soil, the climate, and the productions of Upper California. 150 miles distant from the coast, this gigantic wall receives the hot winds, loaded with vapours, that blow from the ocean and fall in rain and snow on the western part of the range, leaving the opposite declivity exposed to drought and freezing blasts. Consequently you may find at the same season, in the same latitude, and at the same height, mildness of climate, fertility, vegetable riches, in fact, summer, reigning on one side, whilst sterility, cold, and winter exist, with more or less intensity, on the opposite slope of these mountains, whose sublime beauty is perhaps unequalled throughout the world.

VIEW OF THE GREAT BASIN.

CHAP. XIII.

DESERTS OF THE WEST. — SINGULAR CHARACTERISTICS OF THE GREAT BASIN. — ASPECT OF THESE SOLITUDES. — THE HUMBOLDT. — NOTES CONCERNING THE CANADIAN *VOYAGEURS*. — RIVER OF THE GREAT BASIN. — LAKE OF THE PYRAMID. — RANGE OF THE CASCADES. — FALL RIVER. — OREGON. — ITS CLIMATE. — THE COLUMBIA. — FORESTS OF OREGON. — FORT VANCOUVER. — MOUNT COFFIN. — SUBMERGED FORESTS. — FALLS AND RAPIDS OF THE COLUMBIA. — THE GREAT *DALLES*. — FORT WAHLAH. — WAHLAH. — CLARK FORK. — SOURCES OF THE COLUMBIA.

BETWEEN the Sierra Nevada, on the west, and the Rocky Mountains, on the east, and from the 25° N. lat. to the Columbia, may be found a succession of interior basins of quite a particular character, inasmuch as the rivers and watercourses have no issue into the sea, but disappear in the sands of the Great Desert, or in the salt lakes. The most remarkable of these basins are the Balsom of Mapimi, situated between the 27° and 29° of N. lat. and the Great Basin, which stretches out over a sandy plain of 202,500 square miles, bounded, on the south, by a chain of newly discovered and as yet unexplored mountains; on the west, by the Sierra Nevada; on the north, by a branch of the Rocky Mountains, and by the Columbia; and on the east, by a range of the Wah-Satch, and of the Timpanogos. Its diameter from east to west is about 525 miles; its form is almost square, and its height varies from 4050 to 5100 feet above the level of the sea. Surrounded on all sides by lofty mountains, its lakes and rivers have no visible communication

with the ocean. Partly arid and scarcely inhabited, the physiognomy of this vast country is that of a wilderness, studded with numerous oases which might afford a dwelling for whole populations of agriculturists. It is in one of these sites, so favoured by nature, that the Mormons have established their principal residence, as we shall see in the course of our descriptions.

The interior of the Great Basin is mountainous; the mountains have a uniform aspect, they rise abruptly from a basis of from nine to twenty miles in circumference, to a height varying from 2000 to 5000 feet above the plain: the greatest part of them are covered with trees and verdure: their summits are capped with snow during the greater portion of the year, which snow supplies considerable sources that gush up in torrents, and are afterwards lost, partly in the lakes, and partly in plains of artemise or in alluvial soil.

With the exception of the valleys watered by the rivers, the country, in general, is dry and sterile; scarcely any pasturage or wood is to be seen there. The warble of birds is almost unknown, even amidst the coolest and most lovely groves. The heart saddens as one penetrates into this strange and melancholy region. The Indians who inhabit it live solitarily, either in families or in little societies. According to the season they emigrate from one place to another to seek miserable roots, which form their only nourishment; even animals are seldom to be found there. A painful silence, dismal and awful, continually reigns in those regions; one would say that death hovers in that atmosphere, without life or echo, and that it prepares a grave for the traveller who may venture into them.

Another singular characteristic of these deserts is the

phenomenon that the greater number of rivers afford, by rolling with a crashing noise in the enormous ravines which the Mexicans call *cañons:* these ravines which are often impenetrable, are hollowed in the bowels of the earth by the waters to a depth of 300, and even in some places, 900 feet, forming at times perpendicular walls so close to each other that you could easily cross from one bank to the other by means of a bridge of very insignificant length.

Amongst the rivers that irrigate the Great Basin, the finest is the Humboldt, so called by the Americans, as a token of the respect and esteem they profess for the Nestor of scientific travellers. This river is scarcely known to any one except to the trappers and the hunters; nevertheless it is to be found on a few maps under the name of St. Mary or Ogden. It has two branches which take their sources in a group of mountains situated to the west of the Great Salt Lake: after a course of fifty-five miles the two branches unite in one bed, and finally become lost at the foot of the Sierra Nevada although they do not touch it. The Humboldt has no tributaries; as it advances towards the east it gradually loses part of its volume, owing to the absorption and evaporation of its waters, and ends in a muddy lake, the borders of which are flat and whitened by saline incrustations. In the dry seasons the Humboldt is scarcely more than six feet in depth; the country through which it passes is sandy, and quite destitute of soil for agricultural uses; yet its immediate banks are fertilised by alluvial grounds, which are ploughed up by the river at the time of the melting of the snow, and are shaded in a most capricious manner by clusters of willows and cotton-trees. For upwards of 300 miles no obstacle whatever impedes its course; its direction from

east to west now serves as a route for the emigrants going to Upper California. During a considerable length of time the valley of the Humboldt was the *rendezvous* of the trappers, the *voyageurs**, and the agents belonging to

* The *voyageurs* formed a kind of corps in Canada similar to the *arrieros* or waggoners of Mexico, and like the latter, they were also hired for long voyages; still there was this difference between them: the *arrieros* travelled by land with waggons, mules, and horses, whilst the *voyageur* went by water in boats and in canoes. The *voyageurs* were employed by the first French fur merchants for their distant expeditions for the fur trade, through the interminable labyrinths of lakes and rivers in the interior of America. The *voyageurs* date from the same epoch as the *coureurs-des-bois*, and, like them, they pass the intervals of their long and perilous excursions in amusements and feasts, thus squandering in a few days the money they had earned during one or two years of unheard-of dangers and fatigues. Their costume is half European and half savage, but perfectly adapted to their kind of life.

Being of French origin, the *voyageurs* are cheerful and very lively, ever ready to relate a witty anecdote, or to sing a merry song, and dance in the middle of the woods during the night encampment. Polite and obliging, they always try to render service to their fellow-travellers, affording them every possible care and attention.

It would be difficult to find men more submissive to their chiefs, more good-humoured under privations, and more capable of enduring the greatest hardships. Skilful boatmen, they row willingly from morning until night without uttering a single complaint; the pilot sings an old legend, and the rowers unite their voices to his, in the burden of the song. In this way the *voyageurs* beguile their long days; at night they disembark on the borders of a lake or river, light the bivouac-fire, each in his turn recounts some extraordinary adventure, and then they lie down to sleep, heedless of the Indians and the ferocious beasts by which they are surrounded.

At St. Louis, during a festival given in honour of M. Laclede, founder of the town, we had the opportunity of seeing a hundred of these *voyageurs* and trappers dressed in the most curious manner. Many of these *white savages* bear names that are quite celebrated in the annals of the desert, and the accounts of their exploits would fill entire volumes with the most interesting details. The greater number of these children of

the great American fur companies, who used to spend part of the winter there; but now-a-days these intrepid children of the desert pitch their tents in a more northerly direction. The other rivers of the Great Basin are, on the east, the Bear River, which takes its source in the chain of the Timpanogos, and flows into the Great Salt Lake, after having watered a winding valley 190 miles in length and as fertile as it is picturesque; the Utah and the Timpanaozu (or Timpanogos) that fall into the Lake Utah and the Nicollet, which supplies the lake of that name: to the west, the River of the Salmon Trout, that flows into the Lake of the Pyramid; the Carson, the Walker, and the Orven, which descend with a terrific noise from the Sierra Nevada, and then disappear in pretty lakes to which these rivers give their name. In the regions that are as yet unexplored you may also perceive numerous watercourses which have never been disturbed by white people, but which will not long escape the scientific explorations of the government of the United States. Such is the general aspect of these deserts, whose appearance is more Asiatic than American, and which are well worthy our devoting

the wilds are on friendly terms with the Red Skins, and they generally finish by marrying Indian girls, owing either to the frequent intercourse they keep up with the tribes, or on account of the security and the advantage they derive from those marriages.

When Canada passed to English domination, the *voyageurs* and the *coureurs-des-bois* were dejected and discouraged, but gradually they became reconciled to the new comers, and ended by serving them loyally. Since steam-boats have been invented, the poetic existence of the *voyageurs* has almost disappeared; the echoes of the lakes and rivers no longer repeat their joyful French songs. Their glory is extinct; they are no more the masters and the great navigators of the inner seas of the new world, and in a short time hence the very name of the *voyageurs* will be no more than a pleasing legend of the American solitudes.

a few pages in describing them, so as to give our readers some notion of their most important details.

To go from San Francisco, in Upper California, to the Great Basin, and from thence to Oregon or to the United States, you should ascend the River de los Americanos and cross the Sierra Nevada at the 39° 17′ 12″ N. lat., near the sources of the Salmon Trout. This passage is forty miles east of New Helvetia, and 7200 feet above the level of the sea. In winter it is very difficult to open a way for oneself through the Sierra Nevada, on account of the inextricable defiles of those fearfully steep mountains, and the great abundance of snow which forms the peculiar characteristic of that range. But in summer this route is of a picturesque grandeur and beauty not to be met with in the Pyrenees, the Alps, or even in the Himalayas. The rocks of lava, which are everywhere to be found, have a granitic aspect and contain numerous fragments of obsidian. The nut pine (*Pinus monophylla*) grows in luxuriant abundance on the two slopes of the chain; the nut is oily, but of a most agreeable flavour; it constitutes the principal food of the Indians of those regions. At 9000 feet above the ocean the cedars often attain a height of 135 feet, and the red pine (*Pinus Coro-rado*), which is the principal occupant of the north-western forests of the Sierra Nevada, also frequently measures ten yards in circumference at the base by 156 feet in height. The most elevated passage in the south of the Sierra Nevada is 9360 feet above the level of the sea,—that is to say, almost 2100 feet higher than that of the Rocky Mountains, and 1000 miles from the Dalles of the Columbia.

By following the course of the Salmon Trout you arrive at the Lake of the Pyramid in the Great Basin; the river

is wide, shaded by cotton-trees and bordered with caves, in which a few Indian families dwell; on its banks you may also see several Indian villages formed of huts constructed of straw, the inmates of which are very much afraid of the whites.

The Lake of the Pyramid is a large and fine sheet of green water, placed 4890 feet above the level of the sea, and 690 above that of the Great Salt Lake. It seems to be set in a circle of hills and mountains, beneath which grow tufts of *Ephedra occidentalis*, whose sombre colour adds to the gloom of spots already so dreary owing to their aridity. The tranquil waters ripple or murmur softly on their rocky or sandy borders. Towards the southern extremity a natural pyramid arises to a height of 600 feet, which bears a striking resemblance to the pyramids of Egypt.

Wild sheep come to quench their thirst on the borders of the lake, the waters of which are rather saltish, and contain enormous salmon trout upwards of three feet long. Numbers of ducks sport on the tiny waves, and impart a little life to this profoundly calm nature, which reminds one of the silence of the deepest solitudes.

From the Lake of the Pyramid you can round the Great Basin, in order to visit the Columbia, Oregon, and the finest deserts of the north-west. For this purpose you should direct your steps towards the range of the cascades, which is the northern prolongation of the Sierra Nevada that you skirt along from Lake Tlamath to the Dalles of the Columbia.

As soon as you have left the Lake of the Pyramid in the rear to reach the range of the cascades, you ascend northward, passing through an arid and sandy country, where the grass is always saltish, or covered with a slight

efflorescence of salt. The artemise—that cherished plant of the wilderness which grows vigorously in the most ungrateful soil—generally attains in this place a height of nine feet, whilst the other plants vegetate and wither quickly near their mighty sister. Now and then you fall in with muddy or dried up lakes; some of them, however, contain pure limpid water, and thermal springs. The first and, perhaps, the most considerable of these springs is that situated a few miles north-east of the Lake of the Pyramid. It gushes in a very noisy manner, and at irregular intervals, from the middle of a vast basin. The water is clear and impregnated with common salt, but in so small a quantity that it might be perfectly used for culinary purposes. Its temperature is 208° on the borders, but in the centre of the basin it must be much higher.

From thence to the 43° N. lat., the reservoirs that receive the mountain waters follow each other in almost uninterrupted succession. In this latitude the mountains to the left recede and form a kind of bay, which has the appearance of a horse-shoe. They leave at their base a flat shoal covered with artemise, saltish grass, and swampy ground. The singularities of nature are so frequent along all this route, that it would require many volumes to convey a complete idea of them, consequently we can only point out a few as they occur to our mind.

When you have passed the horse-shoe, of which we have just spoken, you turn a little to the west to enter the valley of the Fall River. This country is greatly diversified, most difficult traverse, and is even dangerous. All that the imagination can conceive of frightful objects are here assembled to terrify the most hardened traveller. On all sides may be seen enormous ravines and precipices, incalculable depths and hollows, gigantic peaks, steep

PYRAMID LAKE.

summits, overthrown rocks, under which rush foaming waters that reappear shortly after beneath the open sky, or under a dome of dark foliage, which grows with exuberant vigour in the monstrous anfractuosities of inaccessible forests, horrible abysses continually resounding with the noise of the cascades. Whilst the astonished eye gazes with delight on the bluish summits of the distant mountains—on the gazon which covers the rocks—and on the blooming flowers that hang in garlands all around—the ear is stunned with the monotonous roaring of the torrents which gush impetuously from amid this noisy chaos, and then fall into beds of granite.

Before entering the valley of the Fall River, you pass by Lake Tlamath, situated at the foot of Mount Pitt, in 42° 30′ N. lat., and 122° W. long. During part of the year this lake is nothing else but a beautiful savannah, filled with a particular herbage which the animals are very fond of. Still farther, on the slope of the range of the cascades, you traverse forests of firs or pines, the cones or fruit of which are half a yard long. Above the forests arise peaks mantled in snow, and peopled, by the imagination of the Indians, with spirits and genii. Basaltic rocks of curious forms link the plains to the mountains by a succession of steep *plateaux* placed one above the other, like the steps of a staircase. The volcanic action on the hills bestrewed with cedars and larch-trees 150 feet high, springs of thermal waters and gas, streams, torrents, and rivers flowing into deep valleys, render this portion of the great deserts as interesting as it is truly toilsome to visit.

Among the basaltic strata and the volcanic rocks you also see layers of white argil for making china, the fineness of which might rival the pastes of Sevres and of Saxony.

The range of the cascades is so called owing to the number of falls and rapids formed by the rivers which take their sources in these mountains. On the west it presents a barrier to the clouds, fogs, and rains, which, coming from the Pacific Ocean, fall against its rugged flanks, situated 135 miles from the coast. These mountains stretch out from Mount Tsathl to the English possessions. Above the chain rise seven peaks, which can be distinguished afar off. They are the Tsathl, the Pitt, the Jefferson, the Hood, the St. Helena, the Regnier (or Rainier), and the Baker Mountains.

The Fall River is one of the principal tributaries of the Columbia, into which it flows a little above the Dalles. Its *embouchure* is divided into several arms. At this spot the two rivers seem as if to vie with one another for length, and produce a terrific noise. The Indians go there periodically for the salmon fishing. The banks of the Fall River appear to contain great quantities of fossil charcoal; argentiferous lead is likewise to be found on the surface of the earth.

The Columbia is one of the largest rivers of North America; its name was given to it by Captain Grey, who ascended it partly in 1792 in his ship the *Columbia*. It was successively visited by Messrs. Vancouver, Mackenzie, and Lewis and Clark, who made important discoveries in Oregon upwards of half a century ago. The two branches of the river received the names of Lewis and Clark, after two celebrated officers who were charged in the year 1804, by the Government of the United States, to explore that country. In 1810, Mr. Astor, of New York, sent two expeditions into Oregon, to secure the fur trade. The one that went by sea founded the fort called Astoria eight miles from the mouth of the Columbia.

The territory of the Oregon, the greater part of which is washed by the Columbia, is that portion of North America which extends from the 42° to 50° N. lat., and from the Rocky Mountains to the Pacific Ocean. Bounded on the north by the Russian possessions, and on the south by California, it forms, like the Great Basin, a kind of parallelogram of about 800 miles in length by 500 miles in width. The epoch of its discovery is not known; but it is beyond all doubt that the Spaniards had establishments there, for a brass crucifix, similar to those worn by the missionaries, was found in the possession of a tribe; and in the island of Vancouver may yet be seen brick ruins, evidently the remains of the dwellings of ancient colonists. Now, if we consider that the straits which separate this island from the continent are called Juan Fuca, we must conclude from these indications that the Spaniards penetrated into the country long before the Americans or the English.

A remarkable feature in the climatology of this portion of the great deserts, is the mildness and uniformity of the temperature that constantly reigns over all the southern regions watered by the Columbia and its tributaries in the Great Basin properly so called, and as far as the Rocky Mountains. This ridge of North America seems to divide the continent into two very distinct zones. The winters are most rigorous, the summers are suffocating, and all the variations of a capricious climate, which prevail on the side of the Atlantic, are scarcely felt on the side of the Pacific. In the plains and villages of Oregon the snow is seldom above a foot deep; the winters are more rainy than cold. The rains commence in October and end in March; they are often accompanied with thunder and lightning; the atmosphere is continually

overcast by thick clouds that hide the sun for weeks together, but as soon as it can dart its beams through the vapours, it immediately imparts to the air a vivifying glow of heat. From the month of March until October, the air is serene and the climate quite delightful, and though rain is then very rare, nevertheless a certain humidity is kept up by light fogs, which cover the verdant prairies during the early part of the day. This uniformity of temperature should be attributed to the winds of the Pacific Ocean that extend from the twentieth to the fiftieth degree of north latitude, modifying the heat of summer and the severity of winter; so that you may wear the same clothes throughout the year without feeling in the least inconvenienced by the heat or the cold.

For a distance of from thirty to forty miles from its *embouchure*, the Columbia is, properly speaking, but an arm of the sea, indented with coves, and rendered very dangerous by breakers. At the entrance towards the south may be found a slip of sandy ground called Point Adam. Cape Disappointment, which is on the opposite bank, is a kind of peninsula terminated by a promontory, and crowned with a forest of pines. Immediately behind this cape opens a wide bay, which ends at Chinook's Point, — thus named on account of the Indians of that tribe, who live in the neighbourhood.

The breakers at the entrance of the river stretch out like an insurmountable barrier, causing a thrill of terror to all those who behold them for the first time. The frightful roaring of the waves, the dangers of the channel, inexperience of the strength and direction of the currents, the transition from the clear to the muddy water, all concur to throw uneasiness into the mind even of the most dauntless sailor. Once the breakers

are cleared, you can constantly keep the middle of the river, for water is always to be found there in sufficient quantity to float ships of the largest tonnage.

The Columbia, from the sea to its division into two branches, offers a succession of scenery, sometimes picturesque, sometimes grand, but always magnificent. The two banks are constantly hemmed in by mountains of a most strange and romantic aspect, or by forests of truly sublime beauty. In general, all the forests of Oregon are very remarkable for their imposing size. From the most gigantic trees to the most humble shrub, everything excites the spectator's astonishment. Between venerable trees, whose tufted and lordly branches become blended, forming thick vaults of prodigious height, grow myriads of plants, and aromatic or fruit bushes; vines and bindweed entwine themselves all around, — hanging from the branches of the white oak and the red cedar, — mingle and harmonise their brilliant foliage with every shade of verdure, and render these forests almost impenetrable for men, and even for wild beasts. The parasitic plants and the bindweeds form one of the peculiar characteristics of those woody countries. One in particular seems to be the queen of these sombre and poetic solitudes: its perfectly beautiful flowers are composed of six petals four inches long, and of crimson hue, specked with white in the calyx of the flower; its leaves, of a lovely green, are oval, and disposed in groups of three. This plant climbs to the very summit of the highest trees, yet without touching any of them, then descends perpendicularly, afterwards, interlaces itself to every branch and plant it comes in contact with, and thus festoons the whole forest in a capricious manner with garlands of unbounded length, producing the effect of an immense drapery of

verdure bedecked with the choicest flowers. The Indians employ the fibres of this bindweed to make baskets, which are so finely wrought as to be able to contain water.

The banks of the Columbia are frequented by multitudes of swans, pelicans, herons, ducks, eagles, vultures, crows, pigeons, pheasants, partridges, and other birds of different species. The two only dangerous reptiles that are to be found there are the rattlesnake, and another serpent of the same size, which is covered with white, red, and yellow streaks. Large lizards of about half a yard in length, and armed with very strong claws, make their burrows amid this extraordinary nature. At times, also, the river recedes to form wide bays, in the middle of which spring up pretty little islands, set, as it were, like a thicket of flowers and verdure on a turf burned by the rays of the sun.

Next to Astoria, the first fort you meet with as you ascend the river, is that of Vancouver, situated on the point of that name, 45° 36′ N. lat. and ninety miles from the mouth of the Columbia. Although Fort Vancouver be situated at above three degrees north of the meridian of Paris, you nevertheless enjoy there a similarity of climate, not only in the general temperature, but even in that of the four seasons.

Southward of the fort, on the left bank of the Columbia, the valley of Walahmette or Wahla-math opens before you; the soil is extremely fertile, and is cultivated by numerous American and Canadian colonists. Going still more to the north you pass before Mount Coffin, which is an isolated rock rising one hundred and fifty feet above a swampy ground, and which is greatly venerated by the Indians on account of its being a place of sepulture. On

its summit may be seen a considerable number of dead bodies placed in canoes, beside which trophies or offerings such as cloths, all kinds of ornaments, baskets and other utensils, are hanging from poles of different heights. The friends of the deceased, and particularly the women, go each day at dawn and at twilight to visit beloved graves, weeping and singing the praises of those who are no more. Of an evening when one ascends the river, and hears these mournful chants mingling with the whisper of the breeze and the murmurings of the waves as they break on the beach; when one beholds these aërial tombs becoming tinged with a reddish hue by the last glimmering of the setting sun; and Nature, before seeking repose in the silence of night, sends up towards the Eternal her last canticle; in this moment of indescribable solemnity the traveller feels himself pervaded with ineffable sentiments, with a crowd of heavenward thoughts; he is affected by the double spectacle of poesy and of sorrow, and despite his efforts, tears roll down his cheeks, yet they convey peace to his soul, for tears in the desert are often a prayer.

Thirty miles from Fort Vancouver the mountains become compact on each side of the river, and enclose it between enormous cliffs overhung with firs and white cedars, in the vacuum of which gush forth cascades that form, as they descend, light clouds white and vapoury above the Columbia. One of those cliffs, curiously worked by the hand of time, resembles the ruins of an old fortress; the indentations of its towers allow two cascades 150 feet high to flow from its flanks.

In different places, along the borders of the Columbia, you see quantities of trunks of trees which appear above the water. They consist principally of pines that are still

erect, although they are almost twenty-one feet below the surface of the river. Tourists have called this collection of trees, the "submerged forests." They are probably the result of some terrestrial convulsions or falling in of the ground. The Indians assure us that these forests were submerged by the falling in of rocks, beneath which the river flowed gently in former days; these rocks, in tumbling, inundated the great forests of cedars and pines by elevating the level of the waters. It is to the same cause that the Indians attribute the origin of the cascade of the mountains.

At 175 miles from its *embouchure*, the Columbia falls from a height of twenty feet on a sloping bed of black rocks, forms a series of rapids, and falls again from a height of about eight feet, notwithstanding two enormous rocks which encumber its bed, seeming to wish to oppose its passage: the river then spreads itself over a vast basin, as if to rest after the efforts it had to make whilst wending its way through the range of the cascades; after which, for a distance of about four miles it redescends by furious bounds, confined, all the while, between walls 540 feet in height, called the Long Narrows.

It would be difficult to find throughout the world a more sublime and romantic spectacle than the one presented by those great solitudes seen by moonlight. One would say that nature had united all its powers to display the greatest magnificence in this spot. During the transparent obscurity of a fine starry night, the perpendicular mountains that rise with majestic boldness on each side of the Columbia, appear like a colossal gallery leading to an antediluvian world. The deafening noise of the whirls formed by the waters as they rush into a narrow passage, or break with a crash against black rocks

VIEW IN THE WALAHMETTE VALLEY.

imparts a thrill of terror to man, who might easily imagine that he was assisting at the great cataclysms of the creation. The isles by which the bed of the river is obstructed bear a resemblance to moving shadows, or to the darksome entrance of the dwelling of some marine genii. Streams and torrents may be seen in every direction rolling down heights which are covered with sombre forests, then bounding from cascade to cascade to the foot of the rocks, forming at the same time a thousand graceful undulations; like gauze streamers, such as the water-nymphs might wave in the air by the glimmer of twilight. Mount Helena and Mount Hood, like two giant guardians watching over a treasure, rise on opposite sides of the Columbia, above a range of mountains: the radiant light of the moon sheds a halo around them, and their aërial summits seem to hover in space like clouds of white plumes.

The Dalles of the Columbia, which we have often mentioned, come after the cascades; they are two great basaltic walls that compress the river into a canal scarcely fifty-eight yards in width. These walls are hollowed out in a circular manner at the base by the action of the waters that keep continually whirling there.

The word *dalle*, which is the old French name for trough, is given by the Canadian travellers to all localities where streams or rivers are enclosed between rocky walls. The great dalles are much frequented by the Indians, who go thither to fish for salmon, and by the emigrants on their way from the United States or the English possessions to Oregon. When the waters are low you may descend the dalles in a boat without incurring much danger; but in the season of the great rains or of the melting of the snow, you are obliged to make a *portage;* that is to say,

to transport the boats and merchandise by land, from one extremity of the passage to the other.

From the great Dalles to Fort Wahlah-Wahlah, you pass by many tributaries of the Columbia. One of the most important is the Umatilah, which, like the Wahlah-Wahlah, rolls its torrents over a stratum of basalt. Immediately after the Umatilah, on the right bank of the river, by the 45° 58′ 8″ north latitude, you fall in with a basaltic rock placed on a slight acclivity, and representing two towers in ruins, of a most picturesque effect. This singular rock commands a view over a vast extent of country, so that one may thence acquire a just idea of the geological formation of the valley of the Columbia. A few willows afford the only shade that comes within the traveller's gaze.

Fort Wahlah-Wahlah is built in the delta formed by the junction of the river of that name with the Columbia, whose breadth is 400 yards at this spot. The fort belongs to the Hudson's Bay Fur Company. It is constructed on a sandy plain, that fills the air with clouds of dust and sand, which are constantly stirred up by the regular west winds. At about nine miles above the fort the two branches of the Columbia unite to form one of the finest rivers in the world. The northern branch is indifferently called Clarke Fork and Columbia; the southern one is also called Lewis Fork, river of the Shoshonies, or Snake River. These two branches are the media of important communication between the interior of Oregon, the English possessions, and the United States. The companies who trade in furs make use of these two great lines to facilitate their transactions and abridge the enormous distances that separate their warehouses, dispersed throughout these immense northern regions.

BASALTIC TOWERS.

From its mouth to its sources the navigation of the Clarke Fork is very difficult, for it presents a succession of falls, rapids, and dalles. Although the country watered by it is very varied, yet it is in general singularly beautiful: the volcanic islands, the basaltic rocks, the picturesque scenery of the mountains the feet of which touch the river, the brooks and rivulets shaded by clumps of trees, all concur to embellish this virgin nature. The soil, it is true, is rather light, but it nevertheless produces rich pasturage. The forests are traversable, the mountains low, the shoals dotted with brushwood, and the ground covered with tufts of grass. Before entering the territory of the Cœurs d'Alène and of the Flat Heads, you have to traverse several forests which are almost impenetrable. Gigantic cedars grow there so close to one another that the rays of the sun cannot penetrate within their thick masses. Beneath their dark foliage there reigns perpetual darkness, rendered still more dismal by a deadly silence, which is only broken by the creaking of the branches, the screeching of the owl, or the passing of some wild beast.

Clarke Fork gushes with impetuosity from its source in the bosom of the Rocky Mountains towards their northern extremity. Two little lakes, formed by other sources and rivulets, are the reservoirs of its first waters. These lakes are covered with aquatic birds, such as cranes, swans, ducks, cormorants, bustards, and water-hens; and are peopled with white fish, carp, trout, and even salmon, which die there in such quantities as to infect the neighbourhood. The climate is delightful: snow makes but a short sojourn; and the lakes and rivers keep up a constant freshness and a superabundance of pasturage. The mountains are overgrown with thick forests of larch-

trees, pines, cedars, and cypress. Consequently, we are firmly convinced that one of these days this important region will resound with the merry songs of a crowd of colonists who will come hither to derive from the resources of the soil that wealth which others, more covetous, seek in the precious metals buried in the depths of the earth.

AMERICAN FALLS OF THE COLUMBIA.

CHAP. XIV.

LEWIS FORK. — THE BLUE MOUNTAINS. — PRAIRIE BELONGING TO THE NEZ-PERCÉS. — ROUTE OF FORT HALL. — THE AMERICAN FALLS, OR CHÛTES POISSONNEUSES.—VALLEY OF THE BEAR RIVER.—THE GREAT SALT LAKE. —ISLANDS IN THE GREAT SALT LAKE. —DESOLATE ASPECT OF NATURE. — LAKES UTAH AND NICOLLET. — HISTORY OF THE MORMONS. — THE GREAT SALT LAKE CITY.—THE MORMON COLONIES.—THEIR CIVIL AND RELIGIOUS ORGANISATION.—ROADS TO FORT LARAMÉE.—THE TIMPAMOZU RANGE. — EXTRAORDINARY SPRINGS. — ARTEMIS DESERT.— CHAIN OF THE WIND RIVER.—PANORAMA OF THE ROCKY MOUNTAINS.—A FEW WORDS WITH REGARD TO THEIR CONFORMATION. — THE LAND OF THE SOULS OF THE INDIANS.

FROM Fort Wahlah-Wahlah to Fort Hall you follow almost constantly the borders of the Lewis Fork to go to the Great Salt Lake, and from thence to the United States. On quitting the Wahlah-Wahlah you direct your steps towards the south-east, leaving on your right the range of the Blue Mountains, probably so called owing to the bluish tint imparted to them by the resinous trees with which they are overspread. In elevation this range does not exceed from four thousand eight hundred to five thousand one hundred feet above the level of the sea. These mountains contain an extraordinary variety of pines and firs abounding in perfumed resin. Some of these trees, varying in height from 150 to 180 feet, are quite stripped of their branches for upwards of two thirds of their height, but terminate in a magnificent bushy cone. The aspect of the Blue Mountains is also extremely varied. Sometimes

you behold peaked rocks and promontories, from which impetuous torrents burst forth and fall by bounds, producing a terrific noise; at other times the scenery is more lovely, affording a happy combination of high and low lands, of wood and water, and you then perceive hills with soft outlines, evergreen meadows, and rivulets quivering gently beneath a bed of verdure and under cool refreshing shades.

On the slope of the chain is a vast plateau called the Prairie of the Nez-Percés: uneven and stony, it is interrupted by lines of sombre-coloured wood, and covered with mamelons, forage, wormwood, and wild pear-trees. From Upper California to the Blue Mountains, all those regions appear to have been overthrown by subterraneous fires and volcanic convulsions. The basaltic and volcanic formations that are to be seen throughout this region are truly marvellous: here and there immense rows of glittering black columns rise from the bosom of the plain, and extend a distance of several miles. The semblance of ancient cities and castles in ruins may be seen on all sides. Another fact worthy of note is, that this country is almost the opposite of others, inasmuch as the mountains and hills are thickly wooded and covered with luxuriant pasturage, whilst the plains are arid and sterile. The route through the Blue Mountains passes in the middle of another prairie called the Great Round, which is fifty-five miles in circumference. It is a fine verdant basin, profusely watered, and hemmed in by mountains that are overhung by forests of pines (*Pinus Larix*). In this basin may be seen the dried-up bed of a salt lake, whitened by a fine powder containing a quantity of carbonate of soda.

From the Great Round to the Rivière Brulée, the

most picturesque sites appear in almost uninterrupted succession; streams and torrents rapidly follow one another, and flow into exceedingly deep ravines or cañons. The route that is then to be taken, although going in tortuous windings owing to the multiplicity of watercourses, is nevertheless very agreeable: it resembles the wide paths through the green turf of the English parks, over which aged trees of immeasurable height throw a grateful shade. The valley of the Rivière Brulée is smiling and romantic; it is also the last that you have to cross. After this valley you abandon the mountainous regions to penetrate anew into the Great Basin, where the total absence of all high vegetation and the scarcity of water announce the entrance to a desert.

The first river that you find in this northern portion of the Great Basin is the Rivière aux Malheurs, on the borders of which bubble thermal springs, having 193° of temperature. The soil near those springs is so heated by subterraneous fires, that none can approach it barefooted; it is thickly overlaid with very white common salt, which is both fine and good. You then arrive at the Fort Boisé, built close to the Lewis Fork, which comes from the north-east, wending its way through gorges and inaccessible mountains. Fort Boisé is the residence of an officer belonging to the Hudson's Bay Company.

From Fort Boisé to Fort Hall the route is beautifully diversified: sometimes it is undulating and bestrewed with granitic rocks, but in general it is sandy, cut up by torrents of rather insignificant volume, and obstructed by enormous artemises and wormwood; it constantly skirts along the banks of the Lewis Fork, first to the right then to the left of the river. The principal watercourses that you have to traverse are: the Rocky River, the Goose

River, the Swampy River, the Raft River, the Fall River, the Pannack, and the Port-Neuf.

Before reaching the Rocky River, the Lewis Fork forms a succession of rapids and falls called the *Chûtes Poissonneuses*, or American Falls. In this spot the river is confined in a bed 600 yards in width, by 200 feet in height. These falls are frequented by Indians of a very lively disposition, who go there annually to fish for peculiarly fine salmon. A little above the falls, and at forty-five feet higher than the bed of the Lewis Fork, you perceive a subterraneous river, which flows out of the rocks of the opposite bank, but no one can tell whence it comes. Proceeding still more to the east, at 345 feet above the level of the sea, in 42° 47′ 5″ N. lat., and 112° 40′ 13″ W. long., you see the American Falls of the Lewis Fork, which flows majestically in the middle of an immense plain covered with artemises and black rocks. To the left rises the mountain range of the Salmon River, the largest tributary of the Lewis Fork; looking towards the east you descry the Three Butts slightly delineated on the horizon; they precede the Three Tétons, celebrated geographical points which guide the travellers and the trappers in these extensive deserts of the north-west. It is from the snowy peaks of the Three Tétons that the sources of the Lewis Fork are supplied, a little above 42° N. lat.

Leaving the American Falls in the rear, you advance deeper into the wilderness. On the side of the Rocky Mountains you ford the Pannack and the Port-Neuf, and reach Fort Hall, situated at 900 miles' distance by land and water from Fort Vancouver, and at 1326 miles from Westport, on the frontiers of the Missouri. At Fort Hall the winter is very early; the snow begins

VIEW OF THE GREAT SALT LAKE.

to fall as early as September, and the mornings and evenings are always chilly even in the month of August.

Arrived at Fort Hall, you completely abandon the Lewis Fork to go to the Great Salt Lake, and take a southern direction, still keeping a little towards the east, which brings you to the Mormon city. But it is first necessary to traverse the marshy grounds that border the Port-Neuf and the Pannack, this undertaking, however offers difficulty; you then climb lofty mountains, beyond which opens the valley of the Reed River, which conducts you to that of the Bear River near its embouchure in the Great Salt Lake. Those two valleys are remarkably beautiful, although of a singularly wild aspect. Clusters of willows (*Salix longifolia*) are gracefully scattered in the neighbourhood of the water; fields of flax and of mallow (*Malva rotundifolia*) extend to the shoals; hawthorn (*Cratægus*) and alder-trees (*Alnus viridis*) raise their bushy branches above prairies enamelled with flowers, among which, as if laid out for effect, are large clumps of *Eupatorium purpureum.* Mountains upwards of 3000 feet high rise perpendicularly into the air, with their summits indented by the storms, and in some places crowned with cedars and firs; they complete and even heighten the glory of all those riches of nature, by adding gravity to their marvellous beauty.

As soon as you diverge from the valley of the Bear River, you immediately find yourself before the Great Salt Lake, which, with Lake Utah, constitutes one of the most curious features of the aspect of the Great Basin. They both lie eastward; the first is saturated with a solution of salt, the second contains only fresh water.

The existence of the Great Salt Lake appears to have been known for upwards of a century and a half. In

May 1689, Baron de la Hontan, the chief of the French colony at Placentia, in Newfoundland, wrote an account of the discoveries recently made in the west of New France, which was afterwards published in English in the year 1735. This account, from the time of the Baron's departure from Missilimakinac, until his arrival on the Mississippi, is very clear in its details; but the rest of the work is obscure, and apparently apocryphal. Indians whom La Hontan met during his route assured him that their nation was very powerful, and that it was in a country situated a short way off, where there was a great salt lake 300 leagues in circumference. But this information is so vague that it cannot be relied upon as having the least historical authority. The celebrated Moncachtape, a Yazoo Indian, who in 1760 made a journey to the north and west of America, as far as the shores of the Pacific Ocean, does not make the slightest allusion to the Salt Lake in his itinerary; he probably traversed the Rocky Mountains more to the north.

The Great Salt Lake is seventy miles in length, and its height is 4200 feet above the level of the sea. Its waters, as they evaporate, leave traces of salt all over the soil. The rocks that surround it are whitened by a saline substance, which forms into stalactites and incrustations that are often two inches thick. The composition of this salt is thus analysed: —

Chloride of sodium	97·80
Chloride of calcium	0·61
Chloride of magnesia . . .	0.24
Sulphate of soda	0·23
Sulphate of lime	1·12
Total .	100·00

No fish can live in the lake, which is very shallow.

Fresh meat left steeped in its waters during twelve hours can afterwards be preserved like salt meat, without requiring any other preparation. The islands enclosed in the Great Salt Lake are: —

1st. the Antelope, which is the largest of all. It is sixteen miles in length by six in width,. and is composed of a granite eminence whose height is 3000 feet above the lake. This eminence is furrowed with valleys and ravines more or less arid.

2dly. The Island of Frémond, of the Castle, or of Disappointment. Towering above the loftiest table-land of the island is an oblong rock which resembles a castle in ruins, and it is evidently owing to this singularity that the Mormons have named it the Island of the Castle. It is fifteen miles in circumference. This island has neither wood nor water, but it contains numerous plants, and particularly a prodigious quantity of onions (*Calochortus luteus*) about the size of a nut, and which are very good to eat.

3rdly. Muddy Island, which abounds in slates, granite, pyrites of iron, and alum.

4thly. The Island of Carrington, which is covered with flowers and plants, such as the *Calochortus luteus*, the *Cleome lutea*, the *Sidalcea neo-mexicana*, the *Malvastrum coccineum*, the *Stephanomeria minor*, and a new species of *Malacothrix*, and of the *Grayia spinosa*.

5thly. Stansbury Island, which is twenty-seven miles in circumference. Its mountains resemble those of the Antelope. In the present day it is nothing morethan a peninsula joined to the shore by a sandbank. This island is frequented by antelopes, deer, and wolves. Several springs are also to be found there which fertilise the shoals of the valleys. Its most precious plants are — the

Comandra umbellata, a new kind of *Elymus*, of *Stipa juncea*, besides new species of *Heuchera*, of the *Peretyle*, and of the *Stenactis*. Abundance of fossils are also to be seen scattered over the ground.

The other islands are those of Gunnison and of the Dolphin.

To the east of the lake you distinguish an extensive plain partly covered with artemis, with mire, or with salt. From the centre of this kind of muddy bay rise numerous mountains, which appear like islands planted in a sea of saltpetre. Beyond this point commences the desert of the Seventy Miles; a dreary, arid, and desolate district, covered with fragments of all sorts of articles, which the Californian emigrants left there with a view of lightening their baggage, so as to be less encumbered during the route.

Besides this plain, others more or less vast are also to be found on the borders of the lake; they are covered with salt in a solid state, and most admirably crystallised over the primitive sand: other crystallisations some inches thick may also be seen glittering in the sun. Porphyry, metamorphic sandstone, gneiss, white marble, and dark calcareous limestone, form the principal components of the rocks that border the lakes. You may also perceive in certain places on the banks twelve or thirteen steps formed by the waters of the lake as they decreased; the last is at least 198 feet above the present level; which would prove that in this spot exist subterraneous conduits through which the waters flow, at indetermined periods, into the lower basins. The Great Salt Lake must have been formerly a vast inner sea which covered an immense extent of country; as it withdrew, it left behind that dryness and aridity which now characterise the land. One

of the most curious plants of this region is the one called the *Silk Plant* by the Americans, *Vache à lait* by the Canadians, and *Capote de Sacarte* by the Mexicans. Its root is milky and bitter, but its bark is used to make ropes which prove to be stronger than leather. The only birds that frequent these localities are pelicans, cormorants, cranes, herons, sea-gulls, plovers, ducks, geese, and a few swans.

The malediction of heaven seems to weigh heavily on this solitude, which reminds one of the desolate shores of the Dead Sea, where Sodom and Gomorrah were destroyed. To the east there appeared inaccessible mountain ridges, and blood-coloured rocks dotted with green spots; on their flanks undulated dark clouds; whilst thick vapours moved above their summits, like the smoke of a volcano upon an azure sky. Light mists, produced at twilight, hovered amidst its vague glimmer, and danced over the waters, looking like crape tinged with the most lovely pink; this crape spread over the horizon a transparent veil that shed upon nature the charm of a faint light, which, as it gradually rose to the summit of the mountains, assumed a more sombre hue, an indescribably dismal appearance, that filled the soul with sadness and the eyes with tears. This immense valley, of a lugubrious and funereal aspect, recalls to mind that of Jehoshaphat, the valley of graves. An imposing silence continually reigns around this deserted lake, which might well be called the "Lake of Death." On its sterile strand, on the porphyry of its banks, you never hear the patter of the rain, the whistle of the wind, the leaves falling from the trees, the chirp of the birds, nor the swallow's rapid flight through the air. All is calm and gloomy, like the vaults of a gigantic

sepulchre. One would say that God, in a day of wrath, had cursed these solitudes on account of the crimes of their inhabitants, whose ashes lay mouldering for many centuries beneath the sands of the desert.

The Utah Lake is more elevated than the Great Salt Lake, and is situated in a more southern direction: it is said to be thirty-eight miles in length; numerous tributaries descending from the mountains supply it with their pure fresh waters; it abounds in fish, especially in trout of a prodigious size, which constitute the principal food of the Indians of the Utah. To the south-east may be seen, on its banks, rocks of salt incrusted in a bed of red argil. These two lakes cover an extent of 1200 square miles, and are united by a strait or river thirty-eight miles long, called Utah by geographers and Jordan by the Mormons. South of the Utah Lake is the Lake Nicollet, designated by the Spaniards by the name of Severs; it is the reservoir of a river. The Nicollet, which takes its source in the chain of this Wah-Satch Mountains, is upwards of 200 miles eastward.

Before speaking of the establishments created by the Mormons in the American territory, we shall relate in a few words the history of the foundation of this singular colony.

Joseph Smith founded Mormonism in 1830. After a temporary residence at Kirtland (Ohio) he went to the county Jackson (Missouri), where the sectarians received by revelation the order to construct a temple, which though begun was never finished. Driven from this dwelling by the populace, who rose in arms, the Mormons afterwards went into Illinois, where they built on the borders of the Mississippi a flourishing city called Nauvoo. But having rendered themselves odious to the

neighbouring populations, they were again expelled in 1844, and Joseph Smith and his brother Hiram were killed in the prison of Carthage (Illinois).

In February 1846, after having resolved in a supreme council to emigrate into the great solitudes of the west, the Mormons assembled at Monrose (Torra), and commenced their long peregrination under the command of Brigham Young, successor to Joseph Smith. Though often attacked and pursued by the whites and the Indians, the emigrants bore with great courage and stoicism the fatigues and dangers of the route, as likewise a thousand sudden changes more or less disheartening, which they had to undergo during their journey. At last, in July 1847, they arrived at the Great Salt Lake, to the number of 143, exclusive of women and children, well provided with agricultural implements, and with seeds, mules, horses, and oxen. They established themselves close to the river that joins the Utah to the Great Salt Lake, and shortly after constructed a city on its banks, situated in 40° 46′ N. lat., and 112° 6′ W. long., at the western foot of the range of the Wah-Satch Mountains. The ground was soon surveyed, the town divided into regular portions, with long wide streets, and a fort in brickwork erected in front of the great square, as a means of defence against an exterior enemy.

In the month of October following, three or four thousand Mormons having gone thither from the United States, the town and tilled lands were in consequence greatly augmented. From that period, the continual arrival of new emigrants gave such importance to this immense colony, that the want of a civil organisation was seriously felt, and at length became so necessary, that on the 2nd of July 1849, the government of the United States de-

creed, by a special law, that the "State of the Desert," created free and independent in the territory of the Utah, should be admitted into the American Union, and enjoy all the privileges annexed to the other towns of the United States.

It is not possible to convey a correct idea of the size of the Mormon capital, for each month it is considerably increased; two years after its foundation it was already nearly four miles in length, by three in width. The streets run at right angles to each other, as is usual in all the American towns; they are forty-three yards in breadth, having on each side a footpath six or seven yards wide: the blocks or islets formed by the crossing of the streets are about 220 yards in breadth, and divided into eight lots. By order of the municipal council, the houses, built of adoubes, must be seven yards from the footpaths, and the intermediate space planted with trees and shrubs. Facilities for the embellishment of this city are very numerous, owing to its position. Irrigating pipes pass before each door, and furnish abundant supplies of water for the gardens. In the centre of the town is a square, destined for the public offices. In this square also the Mormons have constructed, temporarily, a shed called Bowery, large enough to contain 3000 persons, and which serves them for a place of worship, until they are able to build the "Great Temple," that is to surpass in grandeur, riches, and beauty, all that has ever been constructed of this kind. They have also a mint, which has already produced very fine gold coin.

The situation of the Mormon capital is admirable. To the east and north, it is commanded by the chain of the Wah-Satch, the graceful peaks of which are lost in the

STANSBURY ISLAND.

clouds; the mountains descend to the plains by gradations, forming beautiful verdant terraces, that command all the valley of the Utah. To the west the town is watered by the Jordan, whilst innumerable torrents fertilise the surrounding plains, supplying tiny brooks and streams, that run along the thoroughfares, and cause the gardens to be adorned with verdure and abundance. Northward, there exists a thermal spring, which, by means of subterraneous conduits, is introduced into a bath establishment. Further on is another, of 128°, that falls like a cascade into a natural basin. The Mormons have taken advantage of all the resources of the country, either to beautify their city, or to contribute to the industry and development of their colony. They have also laid the foundation of several other towns in the Great Basin; viz. Paysan, to the south of the Utah Lake; Monti, at thirty-three miles farther in the Pete valley, on the route to California; the City of the Cedar, at sixty miles from Monti, close to the Little Salt Lake, &c. The object the Mormons desire to attain in thus having their towns drawn up in echelons in this direction, is to establish easy communications with the Pacific Ocean. We therefore believe that, owing to the continual immigrations coming to reinforce their ranks already so numerous, before many years have elapsed, all these establishments will be joined by an uninterrupted chain of farms and villages, and that from the Pueblo de los Angeles or of San Diego, to the Great Salt Lake, the route will pass between rows of houses and cultivated fields. The Mormons have made rapid progress in the useful arts and in industry, according to the wants and the resources of the country; they construct all sorts of

fabrics and manufactures wherever they may be required, and soon being able to provide for themselves, they will no longer be obliged to send to the United States.

Although the Mormon government may at first appear strictly temporal, yet it is so closely linked with the spiritual administration, as to render it impossible to separate one from the other. The civil functions are exercised by persons who occupy a certain rank in the church, the importance of which must correspond with the position they hold as civic officers. In the state, as in the church, the two powers are generally confided to the same person. The temporal government, which seems to have been the result of urgent necessity, was as much as possible adapted to the religious ideas of the sect, and to the general wants of the colony. It is quite manifest that such a great agglomeration of individuals of all ages, of all sexes, and of all nations, could not have been ruled by laws purely religious, for, besides the "Latter-day Saints of the Church of Jesus Christ," as the Mormons call themselves, many gentiles pass by or settle in the territory of the Utah, and for them, at least, it was necessary to have a regular civil government.

The budget of the State participates in this double character, and the treasuries of the church are freely and frequently expended as circumstances may require. Its revenue is derived from a system of tithes, almost similar to what was practised among the Hebrews. Each individual, when he makes his profession of faith, is obliged to pay into the treasury of the church a tenth of what he possesses; besides, he must employ a tenth of his time on works of public utility, such as bridges, roads, canals, &c. A tax is also levied on the saints and gentiles,

which constitutes the revenues of the civil government. One per cent is paid on all provisions introduced for the support of the city, except alcohol and spirituous liquors, which are charged with a duty of one half their value.

A few words concerning their religious dogmas. These sectarians pretend that they form actually the only true church that exists on earth, and that eternal salvation is only to be obtained through the medium of the priesthood of Melchisedec. This priesthood, consigned to heaven for the last eighteen centuries, reappeared in 1826, at which period an angel having visited Joseph Smith, their founder, instructed him in the way of truth, and showed him a stone box buried in the ground, which contained several laws written on gold leaves, in a language called "Reformed Egyptian." The angel took up some of those laws and gave them to Joseph Smith, after which he conferred priesthood upon him according to the order of Melchisedec, giving him at the same time the power of revelation, the gift of tongues, and authority to remit or to retain sins. Thereupon, Smith and his associates were constituted apostles to preach the new gospel, and to establish among nations the church of Jesus Christ, and of the saints of the latter days. In 1830 this church had only six members, and in the present day it may be said without exaggeration that it numbers upwards of 100,000. The Mormons believe in the divine origin of the Bible, but they maintain that it has been corrupted, and that a new translation of it is required; they likewise have faith in miracles by the imposition of hands. Their religious ceremonies are almost the same as those of the Protestant communities; they also accompany their chants

with musical instruments. Their system of spiritual marriage is nothing more or less than polygamy, nevertheless they deny the imputation of sensuality with which they are reproached. Of late years the Government of the United States became uneasy about the increasing power of the Mormons, and the supreme authority that they exercised arbitrarily in the great deserts of the West; but we believe them to be too powerful to fear the few soldiers that the United States could send into their country to intimidate them, so that for a long time to come they will remain the sovereign masters of the territory of the Utah.

Two roads lead from the Great Salt Lake to the Nebraska in the Great Prairies west of the Mississippi and the United States. One descends from the Bear River, traverses the range of the Timpamozu to the north, the Rocky Mountains to the south of the Wind River Mountains, and terminates at Fort Laramée situated on the northern branch of the Nebraska. The other crosses the Wah-Satch to the north, the Wind River near 41° of N. lat., the Rocky Mountains to the south, and comes out at Fort St. Vrain on the southern branch of the Nebraska. The first of these routes, being the most interesting, is generally followed; it is also that which we shall endeavour to make known.

After traversing the shoals of the Bear River, covered with flax bearing blue flowers, you enter a series of defiles which are very curious, owing to their wild yet picturesque aspect. At the entrance of one of these defiles is a rock in the form of a column, evidently produced by the falling in of the ground, and which stands erect in the middle of a clump of spinet of the prairies (*Grindelia squarrosa*). To the right the chain of the Timpamozu stretches out towards the north, with at the same time extraordinary

irregularities; now and again you perceive groups of reddish mountains, whose ridges, clothed in snow and dotted with clouds, seem to support the azure canopy of heaven; all around appear fantastic heapings up of ground, of red or green hills, and of rocks either crevassed or representing imaginary cities. The hills, which serve as steps to the still higher mountains, are mostly conical, and seem to have contained innumerable springs, for the basins from which they flowed may yet be seen. One of those hills is concave at its summit. It was formerly a crater 300 yards in circumference, and 60 feet in depth. The interior walls, which are perfectly vertical, have a striking appearance of mason-work; they are composed of brown lava, scorious and polished, evidently the modern production of a volcano. Besides lava, basalt and volcanic rocks characterise the geology of all this country.

Near the curve formed by the Bear River, opens a remarkably beautiful valley, wherein is a basin from whence burst twelve springs of mineral waters, 580 feet above the level of the sea. The principal ones are the Beer Spring and the Steamboat Spring. The Beer Spring flows from an aperture two or three yards wide: its name was given to it by the trappers, on account of the effervescent gas that escapes from the spring in columns of vapour, and also owing to the acid taste of the water. The Steamboat gushes up from the middle of a rock, like a jet of white vapoury water, about one yard in height, accompanied by a subterraneous noise which is continually heard, and which is just like the noise of a steam-engine at work. The analysis of this spring gives the following results:—

Carbonate of lime	92·55
Carbonate of magnesia . . .	0·42
Oxide of iron	1·05
Silex, alumina, water, and loss . .	5·98
Total .	100·00

The water is very warm, and has a most disagreeable metallic taste. Two yards farther you feel regular gusts of hot air accompanied with a slight vapour, and hear another noise, equally regular, but quite distinct from that of the Steamboat. This air causes nausea and giddiness to all those who may be in too great proximity to it. The environs of the basin are most strange and fantastic; the rocks, composed of carbonate of lime and oxide of iron, are tubular and resemble fossil coral; those that are washed by the Bear River consist of layers of calcareous gravel-stone, and of deposits of moss and reeds.

As you emerge from this singular valley, you pass over a lofty table-land, situated between the range of the Timpamozu and that of the Wind River. This table-land divides the waters of that latitude, which flow towards the Pacific Ocean or towards the Atlantic; it is a frightfully arid and monotonous country, where nothing grows save artemis. The voyageurs have called it the Artemis Desert; it is totally uninhabited; several springs are found there, but they are all poisonous, owing to the decomposition of alkaline salt, which kills every animal that drinks of those waters. Many emigrants have also lost their lives in trying to quench their thirst in what they took to be a pure and salubrious brook. In this desert is situated Fort Bridger, above 375 miles from Forts Laramée and St. Vrain. Within a short time the Mormons have traced out a road leading from the Great Salt Lake to

Fort Bridger, and from thence to Fort Laramée, passing by the Devil's Gates and the Red Butts.

The Wind River, which we have already mentioned, is the northern branch of the Big Horn River. This name was given to it because in winter its banks are continually swept by strong winds, which prevent the snow from accumulating thereon. It is said that this phenomenon is caused by a narrow breach hollowed in the mountains, where the river had forced a passage through frightful precipices; this spot is supposed to be the source of numerous streams that dash with fury into gorges over which the river seems to bound. The voyageurs and trappers have also given that name to the mountain chain where the Wind River takes its source.

This range forms almost the central point of the Rocky Mountains; it is situated north-west of the Sweetwater River, and consists of three parallel lines, eighty-two miles in length by nine in width. Its aspect is that of the Bernese Alps in their most marvellous and picturesque points; many little lakes may be seen there, 10,200 feet above the level of the sea. Glaciers are also very numerous throughout these high regions; above them rises a forest of granite peaks quite bare and stripped of all verdure; one of those peaks attains a height of 13,665 feet above the Gulf of Mexico.* From its summit you behold the grandest panorama that is probably to be seen in the world. Turning to the side of the setting sun, you see at your feet innumerable lakes and

* It is in this part of the Rocky Mountains, W. long. 110° 8′ 3″ and N. lat. 42° 49′ 49″, that are situated the sources of those rivers which with the Mississippi are the largest of the American continent, viz. the Colorado of the south, the Columbia of the Lewis Fork, the Missouri, and the Nebraska.

rivers; to the left the sources of the Colorado, which gushes from a basin of porphyry, foams, whirls, meanders, appears and disappears beneath marble rocks, and then rolls on until it falls into the Californian Gulf, after having watered immense wilds, the greater part of which are as yet unexplored. To the right the valley of the Wind River is delineated with its fantastic contortions; still farther you descry the sources of the Yellow Stone, one of the largest branches of the Missouri. Northward, as if lost in the clouds, are the perpetually iced summits of the Three Tetons, from whence flow the two greatest rivers of that part of the globe, — the Missouri on the east flank, and the Columbia on the opposite declivity. To the south the range of the Medicine-bow displays its graceful outlines; whilst the Nebraska, flowing from its bosom, imparts freshness and life to the great prairies of the West. All around vapoury peaks ascend towards the heavens, their steeps furrowed with ravines and covered with white spots, above which shines a purplish gleam. In the air you only perceive fringes of snow gilded by the sunbeams, and silvery bandrols sparkling in the blaze of an ocean of light. On all sides aërial mountains appear in space, as if hovering above the clouds, like flakes of foam proceeding from an invisible celestial cascade.

The confused noise of the torrents, as they dash their frozen waters with impetuosity over beds of rocks, the wind blowing fiercely in the dells, which are shaded by trees that groan in the forests beneath the violence of the storms; all these clamorous or melodious voices, caused to resound by the echoes of a thousand vibrations, sonorous and full of charm, never reach those elevated summits, where the report of a musket would merely produce a vague sound which ceases instantaneously, in-

stead of being prolonged as is usual in the lower atmosphere.

In the depths of this immense chaos of torrents, rivers, porphyries, granites, basalts, and marble, which come out of the bowels of the earth, and are lost in the immensity of the ocean, of the solitudes, or of the firmament, forests of cedars, of oaks, or of pines, stretch over the wild space, and cover with their sombre foliage the steepest ravines, the most rugged glens, as likewise the most happily favoured valleys; from this imposing nature where everything is sublime and solemn, God has only removed the rural beauties so common in our hemisphere.

The range of the Great Horn River, situated to the north of that of the Wind River, forms part of this grand system of granitic mountains, which extend parallel to the shores of the Pacific, from the Isthmus of Panama almost as far as the Arctic Ocean, and seems to continue the chain of the Andes of South America. It is owing to its rough, shattered, and craggy character, as also on account of the bareness of its summits, that this long range has received the name of Rocky Mountains. Rising in the middle of vast plains, traversing many degrees of latitude and longitude, and parting the waters of the Atlantic from those of the Pacific, it has also been designated under the figurative name of the backbone of the New Continent.

The Rocky Mountains do not present an uninterrupted line, but a succession of groups of mountains, and even sometimes of detached peaks. Although several of those peaks attain the regions of perpetual snow, their elevation above their immediate basis is not so considerable as one would imagine; for, from north to south, all the range of the Rocky Mountains rests on prairies as on a

pedestal, varying from 3000 to 4500 feet in height. Between the groups of mountains are valleys watered by tiny streams, which gradually become fine rivers as they advance in the plains, and finally discharge themselves into those great arteries of the American prairies with which our European rivers can bear no comparison. Whilst the summits of the Rocky Mountains are bare and stripped of all vegetation, their flanks are capriciously wrapped in enormous draperies of shrubs, pines, beech-trees, birch-trees, oaks, and cedars of a prodigious height. On sheltered plateaus and in places where the soil is covered with good earth, there grows a flora which is as rich as it is varied. The ravines possess quantities of alpine plants, of magnificent asters, amid which the *Dodecatheon dentatum* expands its beautiful scarlet petals. A species of squirrel is almost the only inhabitant of these lofty latitudes.

The Alps and the Pyrenees can afford nothing more varied, more picturesque, or more sublime, than this immense series of peaks, some of which raise their majestic summits to 15,000 feet above the level of the sea. Ever and anon you perceive imperfectly extinct volcanos or gigantic rocks, which unite to represent an imaginary staircase adorned with forests; at times also argillaceous and calcareous strata appear, cross each other, give way, and then break up after having traced the most fantastic lines and designs. Often, one could fancy himself amid the ruins of a city of the middle ages, with its indented dungeons, its graceful turrets, its cracked and broken walls, and its deep ditches. Besides the volcanic traces so frequent in those mountains, you also see great quantities of wood fossils, of asphalt, and of obsidian, with which the ancient Mexicans made knives for their

sacrifices, and which the Indians use to make points for their arrows and lances. Several valleys formed by basaltic colonnades, similar to the Giant's Causeway in Ireland, considerably add to the admiration which this succession of wonders calls forth.

The Indians have a particular veneration for the Rocky Mountains, which are, for them, the limits of the known world, and where the most powerful rivers have their sources. They call them the Bridge of the World, and believe that the Great Spirit, the master of life, resides on one of the aërial eminences of the range. Many of the eastern tribes designate them by the name of Mountains of the setting Sun, and place thereon their ideal paradise, their joyful hunting-ground, which is invisible to mortal eyes. It is also there that is situated the Land of Souls or of Shades, wherein are "the villages inhabited by the generous and the good free spirits," who during their lifetime sought to please the Great Spirit, and who now enjoy everlasting happiness. The more distant tribes relate great prodigies of these mountains. They fancy that when they shall have breathed their last, they shall be obliged to run over them, to climb one of their steepest peaks, passing amidst shaking rocks, snow, and furious torrents. In this manner, after several months of fatigues and dangers, they shall reach the summit, from whence they will discover the Land of the Shades; they will then see the souls of the brave warriors and of the good Indians dwelling under beautiful tents, pitched in a field covered with luxuriant verdure, watered by shining rivulets, and filled with buffaloes, elks, and roebucks. The spirits of the travellers who have behaved righteously during their mortal life will be allowed to go and partake of the bliss and riches of that de-

lightful country. On the contrary, the souls of those who have not been faithful to the laws of the Great Spirit, who have abandoned themselves to vice, will be obliged to redescend, and then to roam about sterile and sandy plains, suffering thirst and hunger, after having seen their companions happy and enjoying perpetual felicity, the recollection of which will augment their own eternal misery and endless torments.

CHAP. XV.

INDEPENDENCE ROCK, OR REGISTER OF THE DESERT.—AMERICAN FORTS.—DESERT OF THE GREAT PRAIRIES.—RIVERS, CONFIGURATION, AND FLORA OF THE PRAIRIES. — INSECTS. — SALTY PLAINS. — ERRORS OF WRITERS WITH REGARD TO THE GREAT PRAIRIES.—DIFFICULTIES OF TRAVELLING. — THE EMIGRANTS' ROAD. — POPULATIONS OF THE PRAIRIES. — THE NEBRASKA.—GEOLOGICAL PHÆNOMENA.—BLACK MOUNTAINS.—MYSTERIOUS NOISES.—VOLCANIC PRODUCTIONS.—SMOKY HILLS.—MAUVAISES TERRES. —THE MANKISITAH-WATPA.—PICTURESQUE HILLS.—INDIAN LEGEND.—THE MAGIC CIRCLE OF THE PRAIRIES.

From the lofty regions which we have just described, you descend into the Great Prairies by the valley of the Sweet-water River, which is bordered with granite rocks and overgrown with artemis as far as the Devil's Gates, a sort of narrow canal 100 yards long, where the river has hollowed an outlet for itself through the rock. A little beyond this passage may be seen the Independence Rock, also called the Register of the Desert. It is a granite wall, 650 yards in length by 120 feet in height, and quite bare except towards its summit. Its base is covered with names cut by the travellers and trappers, who wished to perpetuate in this manner the remembrance of their passage in those solitudes. It is situated at 1000 miles from the Mississippi, in 107° 56′ of W. long. and 42° 29′ 36″ of N. lat. You then arrive on the northern branch of the Nebraska, which is crossed at the Red Butts, a precipitous declivity in argillaceous sandstone,

that terminates the last steps of the Rocky Mountains. From the Red Butts to Fort Laramée, you continually skirt along the romantic banks of the Nebraska.

Fort Laramée, formerly called Fort John, lies on the borders of the river Laramée, in 42° 12′ 38″ N. lat. and 104° 31′ 26″ W. long. It was constructed by the American Fur Company for the protection of their commerce: subsequently this company sold it to the Government of the United States. The soil in that locality is extremely sterile, the dew falls seldom there, and the flora is scanty. The fort communicates with the embouchure of the Nebraska and of the Upper Missouri, by means of excellent roads traced out by the emigrants going to Utah, Oregon, and California. The numerous forts erected by the Americans on their frontiers, and in the countries inhabited by the Indians, are destined to maintain the laws of the United States, to favour the fur trade, and to promote peace among the savage populations. But it must be acknowledged this triple object is but feebly attained, for the garrisons are generally insufficient, and the soldiers are not able to go to the different places where their presence would be required. The greater part of those establishments are nothing more than simple cabins, having merely a ground floor or one story, and built of *adoubes*, according to the Mexican fashion; sometimes also they are of wood or stone. They are enclosed by palisades, or surrounded by slopes of earth; at each angle bastions protect the entrance of the fort and complete the system of defence. The most important ones of the great deserts are, besides those we have already named, Fort Kearney on the Nebraska, in 40° 35′ of N. lat. and 99° of W. long., and Fort Leavenworth on the Missouri, on the north of the Kansas, in 39°

25′ N. lat. and 94° 50′ W. long. In Upper Missouri there are others which we shall have occasion to speak of hereafter.

This immense territory, which extends along the Rocky Mountains on the west, Upper Missouri on the north, the Mississippi on the east, and Texas on the south, is called the "Desert of the Great Prairies." Writers and novelists have spoken a great deal of these solitudes without having correct ideas respecting them, and in a manner that clearly proves to us that they have never visited these extraordinary wilds. Moreover, the extent and nature of this vast territory renders a description of it a very difficult matter; nevertheless, we shall begin with a sketch of its general characteristics, and afterwards we shall give some details concerning its most striking points, which will modify those characteristics; and finally we shall complete our recital with divers sketches, so as to initiate our readers in the different epopees of which these places are the theatre.

The regions whose boundaries we have just mentioned, form the principal great centre of the Indians: the Government of the United States has *penned-up* on the frontiers of Texas, as likewise on those of Arkansas and of Missouri, upwards of 120,000 Red Skins. The Delawares have for their portion 1,500,000 acres of land; the Peorias and the Kaskaskias have about 100,000; the Kikapoos have nearly 770,000; the Shawnees 160,000; the Weas and the Piankashaws 160,000. The Osages, the Pawnees, the Creeks, the Cherokees, the Tuskaroras, the Quapaws, the Omahas, the Otoes, the Kansas, the Chickassas, and the Chactas also occupy in these latitudes extensive territories, which they cultivate more or less. Game being scarce there, and the produce of the chase proving

insufficient to supply the wants of so large a population, agriculture has become for these tribes an important pursuit.

This country is watered by the Canadian, the Arkansas, and the White River, the Osages, the Kansas, the Nebraska or the Platte, the Ni-Obrarah, the Keha-Pahah, the river of the Yellow Stone, the Missouri and its tributaries, which all fall into the Mississippi. The prairies are slightly undulating, and rise considerably as they advance towards the Rocky Mountains. The forests are only to be seen on the borders of the rivers and of the watercourses; they are not as fine as in the other parts of the American continent. The more you penetrate into the wilderness the lower you find the trees, and they gradually disappear altogether, as if to make room for the willows and osiers that form a double cordon of verdure, indicating the presence of water. The absence of high trees is caused partly by the terrible winds that blow regularly at fixed periods in these regions, carrying along with them ruin and devastation; and partly by the habit the savages have of annually setting fire to the prairies, to obtain new grass. The cedar, the pine, and the oak are the trees that best resist this double action of the wind and fire.

The plains are generally covered with a meagre and hard herbage, as likewise with heath, wormwood, and artemis. Intermittent and bilious fevers constantly reign there. A few hills blackened by subterraneous fire, valleys whitened with the bones of men and of buffaloes, such are the principal incidents that interrupt the monotony of those solitudes. With a few rare exceptions, the traveller always finds himself in the middle of an immense circuit of which he is the centre. All around he

sees the same landscape, the same weeds, and the same flowers; and every evening it seems to him that he sleeps on the very same spot where he had rested the previous night. The flora only changes according to the altitude of the ground; like the gradations of a hot-house, each step has a different kind of flower which predominates. Thus, 300 miles from the mouth of the Kansas the plants that characterise this zone are the *Sesleria dactyloïdes*, so much sought after by the buffaloes; the *Amorpha canescens*, the *Sida coccinea*, the *Psoralea floribunda*, some *Lupinus*, and some dwarf *Lathyrus;* as also a wild sensitive plant, the *Schrankia angustata;* whilst a little towards the south you see at each step *Helianthuses*, the *Asclepias tuberosa*, the *Carduus leucographus*, the *Tradescantia virginica*, and the *Asclepias syriaca*, the stem of which is silky, and whose flower serves to make sugar.

The borders of the streams and rivers are always more or less shaded with a few clumps of willows (*Salix longifolia*) and poplar-trees of the *Populus monilifera* and *Populus angulosa.* The shoals are generally peopled with myriads of gad-flies and of musquitoes, which cause horrible sufferings to both men and horses. These most disagreeable insects, as soon as they hear or see a horseman approaching, leave their swampy and pestilential dwellings, and fasten on him, accompanying their hostilities with a sonorous and continual buzzing. Then woe be to him whose horse is too fatigued to gallop away, for the winged tribe soon cause the blood to flow from all parts of his body.

The starling, in this instance, becomes the avenger of man; it places itself without ceremony on the back of the horse, and darts with amazing dexterity on the

gad-flies, which it devours with extraordinary rapidity. We have sometimes seen in the prairies considerable numbers of horses or of horned animals grazing quietly, owing to the protection of three or four starlings which each animal carried on its back; without them the gad-flies would soon have dispersed the herds infuriated by their stings. Now and then you come upon lakes, or "salt plains," as the trappers call them. These lakes or ponds are produced by rivulets or saline springs that overflow in the rainy season, and then spread themselves in the plains, covering a superficies of some miles. When the sun and the droughts have caused the water to evaporate, nothing remains of these factitious lakes save a vast white sheet, sparkling with a saline substance of which the buffaloes are peculiarly fond, so that you are always sure to find numerous droves of these ruminants in the neighbourhood. The mirage is also a permanent phenomenon in these plains of so sad and dreary a uniformity; it continually misleads the inexperienced traveller, who is directing his steps towards New Mexico, California, or Oregon.

Before entering at the eastern side into the Great Prairies, also called the Great American Desert, wherein dwell the buffaloes and the wandering Indians, you must traverse a district of fertile country about 300 miles wide, that extends along the States situated to the west of the Mississippi. It is this country that tourists, poets, and romance-writers generally mistake for the Great Desert, and which in reality is merely the skirts of it. It is then to this common error that we should attribute the inexact descriptions given by the majority of our writers, who, having only visited those vast regions in imagination, have described them according to incomplete reports, or

have fancied that the Great Prairies resembled the plains of the western frontiers. Besides, in these plains, that are like the advance-guard of the desert, and whose limits the eye cannot compass, the tourist finds quite enough of misery to calm his admiration, and to deter him from advancing farther into those solitudes, which are only penetrated by the emigrants going to California, to Utah, and to Oregon, by the savages, by the missionaries, and by rare scientific or military expeditions ordered by the Government of the United States.

The plains found before you come to the Great Prairies are undulating and intercepted by sloughs and rivers which it is necessary to cross; game is so scarce here that you are constantly obliged to have recourse to whatever provisions of biscuit and salt meat you may have brought with you. The vermin, the insects, and the howling of the wolves prevent the traveller from taking rest during the greater part of the night; and the multitude of serpents which the horse's tramp causes to start up in all directions, keep him in a continual state of terror during the day. It also frequently happens that after a wearisome day, passed beneath a scorching sun, he finds nothing to quench his thirst but black muddy water which is full of toads and salamanders. Thunder-storms, that are as frequent as they are sudden, occur from time to time, as if to complete this series of impressions; but they are peculiarly disagreeable to the traveller, who is almost deafened by their terrific peals, and drowned by their deluging showers. In these countries the thunderbolt bursts with a fearful noise, followed by unimaginable crackings that would make one feel inclined to think it was the end of the world, and amid an ocean of forked lightning which

illuminates the entire firmament for hours together with a blood-red fire.

Wormwood and artemis plants are the predominant productions of the Great Prairies, as likewise of all the other deserts; the virgin forests imagined by our novelists are only to be met with in fertile grounds, and do not grow on arid soil. It is only towards the north of Texas that the prairies are dotted with forests, the existence of which has never been explained in a satisfactory manner, for they are sometimes exposed on heights where the wind would be apt to destroy them, and nevertheless they do not appear to suffer from its influence. To the north of the Nebraska, these vast plains are less diversified, but more even, and are constantly refreshed by the breeze. Turf, bespangled with odoriferous and bright-coloured flowers, adorns the dells and hills on which buffaloes and deer graze peaceably. It is evident that those regions were formerly wooded, for trunks of trees, and even entire trees petrified, are often to be seen. Some savants attribute the disappearance of the ancient forests that heretofore covered the western prairies of that hemisphere to the action of fire; others to the change that the climate underwent, or to the natural sterility of the soil. The fossils and shells found on the tops of the most elevated hills in alluvial grounds, and mixed with sand and pebbles worn by the action of the water, prove that diluvian revolutions must have convulsed all that country. A few geologists have even supposed that the great American Desert was washed by the waters of the ocean at the beginning of the world.

In the Great Prairies, the undulations are formed by hills either of sand or of different kinds of rock, which have often a most picturesque effect; they vary from sixty

to four hundred and fifty feet in height. The ground rises gradually as it advances towards the west, as we have already remarked; for instance, the height of the Kansas at the junction of its two principal branches, the Republican and the Smoky Hill River, is 930 feet above the Gulf of Mexico; and, 150 miles more to the west, the soil is 1590 feet above the sea. The uniformity of these solitudes is only interrupted by a few belts of calcareous or sandy mountains, united in confused masses, cut up by frightful ravines, and having the appearance of a fallen world; at other times they are intercepted by arid and rocky heights, which are almost impassable, like the Black Mountains. In the middle of this ocean of verdure, whose enormous waves ever follow one another in their eternal mobility, winds perhaps the broadest road in the world, the one that the emigrants from Europe and from the United States traced out, that they might the more easily go to enrich themselves at the gold mines of California. This immense avenue is like an area continually swept by the winds; the caravans that have passed, and that still pass on this road, are so numerous that grass has not time to grow there. The savages, who had never seen any other thoroughfares but the hunting-tracks in the wilds, fancied, when they saw this road, that the entire nation of Whites had emigrated towards the setting sun, and that a vacuum was to exist in the countries where the sun rises. The graves of the peregrinators succeed each other on the right and left of this great path of life and death, and the solitude around, like a funeral veil, overwhelms them with the image of repose and of the infinite. Numerous remnants of divers objects from exhausted caravans,—entire families dying,

cut down by disease, fatigue, and misery,—strew the ground, wherein lie, side by side and for evermore, whole populations of emigrants. Here and there funereal stakes are planted in the desert, bearing the *totems* of some great warriors, or of old sachems renowned for their wisdom. Extensive bone heaps indicate where entire droves of buffaloes were slaughtered by improvident Indian hunters. Rivers of all sizes, down to the most humble stream, roll their muddy waters over their beds of sand. Clumps of willows, or of poplar-trees, sparsely set on their banks, throw their melancholy shade over the silent waters. A few roebucks and antelopes timidly browse on the greensward of the prairies, with stretched-out ears, and ready to take to flight at the least noise that may occur; for in these places a noise is always the signal of danger.

Such is the general aspect of this region, which can only be compared to the steppes of Asia, or to the pampas of South America; a region truly wild, that seems to set civilisation at defiance to establish herself within its precincts,—a barren land, which is never permanently inhabited by any one, for at certain seasons of the year neither men nor horses, nor the greater number of wild animals, can find sufficient food there. The grass becomes burnt and hard, the springs and brooks dry up, the buffaloes, the deer, and the elks migrate towards more favoured localities, the Indians follow them in their migrations, and the Great Prairies become more deserted than before. On the borders of the rivers lie vast grounds that might be cultivated, or turned into magnificent pasture lands; but we presume that, for a long time to come, this immense territory will be the refuge and the prey of red or white marauders, who will domineer there as

supreme masters, and render all agricultural undertakings impossible.

The population of the Great Prairies is composed of nomadic Indians, who live in a state of perpetual movement, ever tracking the herds and caravans; and of a new race of men whose physical type bewilders all ethnological classification, the heterogeneous production of civilised and savage races, remnants of a mixture of the ancient tribes, now almost extinct, with the wandering hunters, the French and American trappers, the Spanish and Mexican fugitives, the adventurers of all classes of society, and of all the countries of the world; this singular population is increased every year by multitudes of miscreants obliged to fly from the United States to escape the pursuit of justice. To complete this list, we may add a great number of Indians from the east, that the American Government transported to these frontiers, and who, infuriated at having been driven from their original country wherein rest the ashes of their ancestors, not finding sufficient resources in the natural produce of their new residence, and not liking to till the earth, roam about the prairies in immense bands, revenging themselves on the Whites for having caused their forced exile, and living by murder, rapine, and pillage. One may easily understand by this faithful picture of the inhabitants of the desert, that it is both difficult and dangerous to traverse it, and that the emigrants going to the Rocky Mountains, and to the shores of the Pacific Ocean, only find security in their numbers, and in the material strength of their caravans.

We shall now give some of the details that modify the geological and geographical characteristics of these strange solitudes.

The great route marked out by nature to traverse this wilderness, and at the same time the most frequented one, is the valley of the Nebraska, in Indian Ne-Obraska, or the Platte, so called on account of the insignificant depth of its waters, and the extraordinary breadth of its bed. This river is the largest tributary of the Missouri; its mouth is about 600 miles from the junction of the Missouri and the Mississippi. The Nebraska waters an immense valley, which it fertilises during its entire course; its embouchure serves as a division between Upper and Lower Missouri; before steamboats were introduced, the travellers proceeding to the Rocky Mountains or to the northern regions of Upper Missouri considered this the middle point of their journey; so that the crossing of the Nebraska was equivalent, for them, to that of the equator for sailors, and was celebrated with similar ceremonies. The valley is nothing more than a prairie from six to eight miles broad, two or three of which form the bed of the river, which is filled with woody islands of a most charming aspect. The soil is composed of clay and sand; water may also be found there by digging little wells from three to six feet deep; it is generally fertile, and covered with a surprising variety of grass-plots, bedecked with magnificent flowers and plants. The undulations are slighter than elsewhere; they follow one another regularly like the waves of the sea. The hills and valleys appear interminable; hours, days, and weeks roll on, and yet the traveller perceives no notable change in the beautiful scenes which these deserts present; nevertheless, the artist, the poet, and the admirer of God's works daily find enchanting spectacles, new impressions, and delightful reveries. Odoriferous flowers embellish these immense fields of verdure, the breeze

softly bends their frail stems, whilst it cools and scents the atmosphere with the delicious fragrance of a thousand sweet perfumes. The beauty of the solitudes is here displayed in all its sublime grandeur.

Between the Nebraska and the Kansas on the south, extensive undulating prairies unfold themselves to the gaze, but they have not the slightest vestige of trees, save, as usual, near the water-courses. The principal plants to be found there, are aloes, cactus, commelinas, saxifrages, amorphas, yellow-flowered œnotheras, and artemis. This country is continually overrun by Indians, and particularly by the Pawnees, who carry off with singular skill, and a truly remarkable audacity, horses and even oxen, and that out of the best-guarded camps. Ravines are very numerous throughout this territory, displaying beds of alluvial ground, of grit-stone, and of different-coloured limestones. The greater number of those beds contain quantities of fossils, especially towards the Big and Little Blue Rivers. The emigrants are obliged to traverse these two rivers in going from Fort Leavenworth to Fort Kearney on the Nebraska.

Between Fort Kearney and Fort Laramée the route is peculiarly fine, but very monotonous; the flora principally consists of artemis, *Amorpha canescens*, *Asclepias tuberosa*, and the *Asclepias syriaca*, from whence evaporate sweet odours, which impregnate the air round this flower. A few poplar-trees (*Populus monilifera*), long-leafed willows (*Salix longifolia*), and *Celtis crassifolia*, shade the islands of the Nebraska and some graceful sites on the borders of the river.

In 40° 4′ 47″ of N. lat. and 100° 49′ 43″ of W. long., the Nebraska divides itself into two branches; its width at this point is about 1730 yards, and its

height is 2700 feet above the level of the sea. Close to the northern branch of the Nebraska and of Fort Laramée, 600 miles from Fort Leavenworth on the Missouri, are situated two famous rocks; one called Court-house, and the other La Cheminée. The name of Court-house was given to the first by the Canadian voyageurs, on account of its resemblance to the buildings of that kind constructed at St. Louis, and in several other towns of the American Union. Proceeding still farther, you perceive another rock that represents the Capitol of Washington, with its dome and wings on each side. The Cheminée is a column about forty feet high, having the form of a steam-chimney of a manufactory; it is situated on a conical hill of marl and lime. The trappers and the voyageurs positively assert that it was much higher formerly, but that a thunderbolt having fallen on it reduced it to its present elevation. These capricious and singular phenomena of nature are rather difficult to visit, for it is necessary to traverse the Dry Creek, which is neither deep nor wide, but whose bed of blue argil is extremely dangerous. The environs of the Cheminée are composed of kinds of cliff, shaped by the rains into the most strange forms; the rocks are perfectly bare, and the country dreary and desolate. Formerly many cedars were to be seen there; now-a-days they are almost all dead, and their dried trunks add to the sadness and gloom of this spot, yet young pines grow here and there, and seem struggling to succeed the disappearing cedars.

One hundred miles east of the Rocky Mountains extends a range of lofty hills called the Black Mountains, which part the waters that flow towards the Missouri from those that direct their course towards the Arkansas and the

Mississippi. It is in those mountains that the Sheyenne, the Little Missouri, and several other tributaries of the Yellow Stone take their rise.

The Black Mountains are almost exclusively formed of sand-stone; in many places they are peaks cut up by precipices, and fashioned by the hand of time into the most fantastic shapes. As storms, accompanied with thunder and lightning, are of frequent occurrence on their summit, whilst the surrounding plains enjoy perfect calm and a brilliant sun, the Indians imagine that the spirit or genius of storms dwells on these mountains; so that when they want to go across them they place offerings on the trees or on the rocks, to render the invisible deity propitious, and obtain from him fine weather and an abundant chase. They likewise attach great importance to the echoes that are heard on the borders of the precipices. A natural phenomenon adds to the superstition of the Indians with regard to the Black Mountains; by day as well as by night, and at every season of the year, during the most serene weather as during the most inclement, you hear resounding in the glens and dales noises like the report of several cannons fired at the same time.

Savants have attributed these singular explosions to divers causes, but their explanations are not very satisfactory. In the Sierra Piratininga (South America), where these explosions are most frequent, this phenomenon was partly explained to Father Vasconcelles, a missionary Jesuit, who witnessed a rock bursting with a terrific crash, and from the bosom of which he saw dashed forth a stony mass resembling a bomb, which burst either in the air or as it fell. The interior of this bomb was harder than iron, and filled with hard stones, arranged

like the kernels of a pomegranate; some of them were transparent as crystal, others were of a bright red, and others were of various colours. In the province of Guayra it is not uncommon to see this sort of stones thrown into the air by an effort of nature, and invariably bursting with a great noise; fragments of them are disseminated over the soil, looking like so many precious stones, but, unfortunately, without value.

Some persons, having no wish to deal in the marvellous, believe that these detonations simply proceed from the falling of the rocks repeated by the echoes; others attribute them to the bursting forth of the hydrogen produced by lower beds of ignited coals. Whatever the reason may be, the phenomenon exists, and sheds over these mountains the charm of the unknown; consequently the Indians, who attach a supernatural cause to everything that strikes their imagination, assure us that these noises are nothing else but the sighs and moans of the mountains, endeavouring to throw upon earth the precious stones that are concealed within their bowels. Finally, others fancy that they are the dwellings of the wicked spirits, and that each eruption is the result of a combat that took place between them.

In this spot, as near the Great Horn River, the waters are impregnated with sulphur, the ground is agitated by subterraneous convulsions, and sulphureous gas escapes in great abundance from the earth, infecting the atmosphere even at seven miles' distance, and rendering the soil so sterile that even the artemis does not grow there. Bituminous and sulphureous fountains, as also thermal waters, are frequently to be found; gas, vapours, and smoke are incessantly oozing from numerous apertures; and the trappers as well as the savages never speak of these places

but with superstitious fear. For our part, we are convinced that this vapour and smoke indicate rather a great accumulation of combustible matters, than the presence of a volcano. During a considerable time it was supposed that the Upper Missouri traversed volcanic regions, either on account of the phenomena of which we have just spoken, and which extend very far, or owing to a light spongy stone drifted by the Missouri, which was often mistaken for pumice-stone. It is now a well-known fact, that no real volcano exists east of the Rocky Mountains, although smoky hills are very numerous, especially in the Great Bend of the Missouri. The volcanic phenomena which these countries present may be compared to those that are to be seen in the *terrains ardents* of all the other parts of the globe. They are evidently the result of decomposition, produced by the infiltration of the atmospheric waters. Beds of pyrites, which react on combustible materials, such as lignites and other vegetable substances, cause them to ignite immediately; whilst other reactions well known to chemists, taking place on the lime contained in argillaceous beds, produce those masses of crystallised selenite which are observable in the lower parts of these singular beds, and to which we shall hereafter allude in speaking of the Shining Mountains of the Mississippi.

To the north of the Ni-Obrarah, or river of the *L'Eau qui court*, you perceive a vast territory called Mauvaises Terres, and sometimes Terres Blanches, watered by the Mankisitah-Watpa, generally translated by Mauvaises Terres (Bad Ground), but which signifies River of the White Water. The water of this river is strongly impregnated with white slime. The soil drained by the Mankisitah-Watpa is either greyish or of a bright white; it hardens at once in

the sun, and consequently could not be used for agricultural purposes. But, as if to compensate for this defect, it is very rich in all sorts of fossils, and contains, like the borders of the Keha-Paha (tributary of the Ni-Obrarah), numerous bones of mammoths, of mastodons, of antediluvian tortoises, and of the largest mammifera known to naturalists, as likewise other fossils of animals of smaller dimensions. The action of the rain, of the wind, and of the atmosphere operates on the argillaceous hills and the borders of the plateaus, or of the ravines belonging to the Mauvaises Terres, in an almost incredible manner. Seen afar off, these hills appear like old mansions whose style of architecture is lost in the darkness of ages; at times they seem gigantic towers surrounded by graceful turrets; then again the scene changes, and they assume the form of ludicrously shaped columns, supporting the entablature of an immense temple; here may be seen Saxon fortresses, cracked or battered by the storms, and indented at their summits; there cupolas and minarets of an Oriental city, close to which arise colossal pyramids. Every year the atmospheric influence modifies the aspect of these wonderful pictures, and substitutes others no less extraordinary.

Between the River of the Yellow Stone (which is still more to the north than the Keha-Paha) and the Upper Missouri, the prairies are strewed with lava and scoria, and covered with hillocks in the form of cones, varying from 30 to 150 feet in height. Some of these hillocks are merely congeries of cinders vomited from the bowels of the earth during its burning convulsions. Nevertheless this country is very fertile; its valleys are smiling and extremely beautiful. They are shaded by elms, ash-trees, cotton-trees, cedars, and firs; whilst abundant springs and considerable rivulets impart perpetual freshness around.

The Terres Blanches of the River of the Yellow Stone are barely thirty miles in length. They are clayey, and bear resemblance to those of the Mankisitah-Watpa; the same natural curiosities are to be seen there; and one could spend weeks together in contemplating those capricious productions of nature, which transport you to a fantastic world, where the imagination without the slightest effort perceives only marvels.

You may also remark in the Great Prairies small circular places entirely denuded of vegetation, which travellers have called the "Circles of the Prairies." The inhabitants or the frequenters of the desert have not failed to attribute to them origins which are more or less contestable; our simple belief is, that some of these circles were formed by the buffaloes during their sojourn in the same spot, and that the others are the traces of ancient cabins which formerly belonged to the savages. We do not know if it is owing to the incertitude that reigns with regard to these circles that we are indebted for the Indian tradition with which we intend to finish this chapter, but it is certain that if the Indians are indifferent as to the real cause that produces the phenomena with which their solitudes abound, it must on the other hand be said that their inventive imagination is never at a loss; their way of explaining the most extraordinary things, as likewise the most simple ones, is less rational and less scientific than that of the Pale-faces, but it is decidedly much more poetic and more graceful than anything we should be capable of conceiving. One may judge of it by the legend of the "Magic Circle of the Prairies."

"One day, whilst in the prairie, the young hunter Algon arrived at a circular pathway, and yet there was not the slightest trace of a footstep to be seen on the sur-

rounding ground. This path was even, well beaten, and appeared to have been recently frequented by numerous visitors. Surprised and puzzled by what he saw, he hid himself in the grass to find out the cause of this mystery. After waiting a few minutes in anxious suspense, he fancied he heard melodious music in the air, the sweet sounds of which reached his ears at regular intervals. Amazed, charmed, and with eyes uplifted towards the sky, he stood motionless, listening with still greater attention, and restraining his breath for fear of losing one note of the mellow rich sounds of that distant harmony which enraptured his soul; still he perceived nothing save an extremely vague white speck, like an object too far off to be distinguished. Gradually this speck became more visible, and the music more soft and agreeable, and as it approached the place where he lay concealed, he discovered that what he had at first taken to be a tiny cloud was no less than an osier basket containing twelve young girls of exquisite beauty, each having a sort of little drum, on which she tapped whilst she sang with superhuman grace. The basket descended into the middle of the circle, and the moment it touched the ground, the twelve young girls alighted, and began to dance on the little path, at the same time throwing a ball, which was as brilliant as a diamond, from one to another.

"Algon had seen many dances, but none were similar to this one, neither was the music like any he had yet heard; and the beauty of those celestial dancers surpassed all that his imagination could conceive in the regions of the ideal. He greatly admired them all, but being particularly fascinated with the graceful manner and lovely complexion of the youngest, he determined to do all in his power to catch her. To effect this purpose he ap-

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proached the mysterious circle slowly and cautiously, so as not to be perceived, and was just on the point of taking hold of the object of his choice, when suddenly the twelve young girls sprang into the basket, and ascending rapidly into the air soon disappeared in the azure of the firmament.

"The poor hunter gave way to the deepest despair, as with heartfelt sorrow he beheld the enchanted basket vanish, and from his dazzled eyes gushed forth abundant tears. He cursed his fate, and exclaimed, as he wept: 'They are gone for ever, and I shall behold them no more.' Algon returned to his cabin, sad and dejected, his mind was absorbed by this extraordinary apparition, so that on the following day he could not resist returning to the prairie near the magic circle, with the hope that his treasure would again be there. He hid himself in the grass as on the preceding day, and lo! scarcely had he taken up his position when he heard the same music, and saw the basket redescend with the same young maidens, who, as soon as they touched the earth, began to dance as on the previous eve. Then, for the second time, he advanced close to where they were, but the moment they perceived him they jumped into the basket, and were going to recommence their aërial journey, when the eldest said to her sisters: 'Stay, let us see, perhaps he wishes to teach us how mortals dance and play on earth?' 'Oh! no,' replied the youngest, 'let us quickly ascend, I am frightened;' whereupon they all began to sing and started for the ethereal regions.

"Algon went home more distracted and crest-fallen than before; to him the night appeared so long, that he returned towards the prairie before daybreak. While he was meditating how he could succeed in his third attempt

he found an old trunk of a tree, in which dwelt countless mice; he thought that the sight of so small a creature would cause no suspicion to arise among the young girls, and, thanks to the magic power of his medicine-bag (amulet), he took the form of a mouse, having first used the precaution of bringing the trunk of the tree as close as possible to the circle. The twelve sisters descended from the skies, as they were in the habit of doing, and commenced their accustomed diversions. All of a sudden the youngest said to the others: 'Do you see that trunk of a tree? it was not there yesterday.' And she ran towards the basket; but her sisters began to laugh, and surrounding the object of her fears, threw it down by way of amusement. All the mice immediately took to flight; but they were pursued and killed, with the exception of Algon, who, retaking his natural form of hunter at the very moment the youngest sister had lifted a stick to strike him, sprang upon his prey, whilst her affrighted companions got into the basket, which carried them up speedily.

"The happy Algon wiped away the tears that flowed from the eyes of his conquest; he called her his bride, and sought by every means his heart could suggest to prove his affection for her; he loaded her with the most tender caresses and the most delicate attentions; he recounted his adventures in the chase and his exploits in combat; he conducted her to his cabin, using the precaution of putting aside, during the route, the briars and branches, lest they should knock against, or injure the frail and elegant body of his beloved; and when he reached home he considered himself the most fortunate being on earth. Their marriage was at once celebrated amid every imaginable festivity, and the joy of the gallant

hunter was still more increased by the birth of a son. But alas! Algon's young wife being the daughter of a star, the earth was little suited for her celestial nature; her health daily declined, and she wished to see her father once more; yet she carefully concealed her grief and sighs from her spouse, not to afflict his heart, for she loved him dearly.

"One day, remembering the charms which could make her return to the skies, and profiting by a hunt in which Algon was engaged, she made a little basket of osier twigs, then gathered all sorts of flowers, caught birds, and collected every curiosity that she thought would please her father, took her son with her, and went to the magic circle; there she got into her basket with all her treasures, and commenced the song she chanted with her sisters in by-gone days, during their mysterious journeys. Immediately the basket rose gently in the air, the balmy breath of the prairies wafted the sweet notes of her celestial voice to the ears of her spouse: that voice and that chant were well-known to him. Foreboding some misfortune, he at once hastened to the magic circle; but alas! he arrived too late; he could only see a white speck disappearing in the clouds, and hear a feeble and melodious note dying in space like the last whisper of the breeze, or the last sigh of a babe. Then, with his loudest voice, he called upon his wife and son; all was useless; they were in the region of the stars.

"The hunter, in despair, let his head fall upon his breast; burning tears gushed down his cheeks; his grief was secret and silent, but it was terrible and violent, like the subterraneous throes of a volcano that finds no issue to vomit on earth its frightful fires. After two long winters of indescribable anguish, sorrow had at length

made the youthful hunter wax old; but his grief did not grow old, it was ever the same.

"Meanwhile his lovely companion, returned to the brilliant sphere of the stars, to the bosom of that bliss which she enjoyed in her luminous country, had almost forgotten the unhappy one she had left on earth; but the presence of her son made her remember him. As he grew up he wished to visit the place of his birth. One day the star said to his daughter: 'Take thy child and return on earth, ask thy spouse to come with thee and dwell amongst us, and tell him to bring with him a sample of every animal and every bird he has killed in the chase.' Then the mother, taking her son with her, redescended into the prairie. Algon, who was always near the magic circle, was so overcome when he saw his wife and son returning towards him, that he thought he should have died with joy; his heart beat with impatience, and shortly after he pressed to his breast the cherished objects of his tenderness and love.

"According to the wish of the star, he hunted with extraordinary activity, so as to collect within the shortest delay as many presents as possible, he spent his days and his nights seeking the most curious animals, taking the wings of some, the tail of another, the paws of a third, and so forth. When he had made an ample provision he took all his treasures with him, and, in company of his little family, started for the heavens. The inhabitants of the starry regions manifested great delight at seeing them. On their arrival the chief of the stars invited his people to a general festival, and when all the guests were assembled he told them that they could choose amongst the terrestrial curiosities brought by Algon, and take whatever pleased them the most. Some took a wing,

others claws or tails, &c. Those who made choice of claws or tails were changed into quadrupeds, and others were metamorphosed into birds. Algon took a feather of a white falcon, it was his totem (heraldic sign); his wife and son imitated him, and also became white falcons. All three then spread their wings and flew down to the prairie, where descendants of this marvellous union are yet to be found."

CHAP. XVI.

ORIGIN OF ST. LOUIS. — M. LACLÈDE. — CESSION OF NEW FRANCE TO ENGLAND BY LOUIS XV. — LOUISIANA. — THE FOUNDATION OF ST. LOUIS. — SPEECHES PRONOUNCED BY THE MISSOURIES AND BY M. LACLÈDE. — CONSEQUENCES OF THE TREATY OF 1763. — THE HISTORY OF THE COLONY. — SPANISH DOMINATION. — POLITICAL CONSIDERATIONS. — ANECDOTE. — AMERICAN DOMINATION. — MINNESOTA. — THE DISCOVERY OF MINNESOTA. —UPPER MISSISSIPPI. — LAKE PÉPIN. — LA HONTAN'S RIVER. — INDIAN LEGEND RELATIVE TO LAKE ST. CROIX. — PRAIRIE DU CHIEN. — GROTTO OF NOAKANTIPI. — FORT SNELLING.

THE events that occurred prior to the foundation of European establishments in America are generally so little known, that we deem it necessary, before penetrating into the last regions that remain for us to describe, to give some historical details concerning the capital of Missouri. St. Louis, the Queen of the West, was French by birth; her cradle was suspended in the forest watered by the Mississippi; her childhood was tried by many privations; and her adolescence was reached amid the terrors inspired by the Indian's cry. Her youth, though more calm, was scarcely more happy. Abandoned by her guardian, the Lion of Castile, she was again claimed by her ancient mother; but only to be forsaken anew. She then passed under the protecting wing of the American eagle, and became the metropolis of the Empire of the Deserts.

M. d'Abadie, civil and military director-general, and governor of Louisiana, conceded, in 1762, to Messrs. Pierre Ligueste, Laclède, Antoine Maxan, and Company,

the monopoly of the fur trade with the Indians of Mississippi and Missouri. M. Laclède, a man of remarkable intelligence, of an enterprising character, and the principal chief of the company, immediately prepared an expedition, with a view of forming a large establishment in the north-west. On the 3rd of August 1763 he started from New Orleans, and on the 3rd of November following he reached St. Geneviève, situated sixty miles south of where St. Louis is actually built.

At that epoch the French colony, established sixty years before in Illinois, was in a surprising state of prosperity. It had considerably augmented its importance since 1732, at which period France was beginning to realise her great conception of uniting Canada to Louisiana by an extensive line of military posts, that were to have been supported by forts the strategic positions of which were admirably chosen. But when M. Laclède arrived in the country, Louis XV. had already signed the shameful treaty by which he ceded to England, in a most blamable and inconsiderate manner, one of the finest regions of the globe, the possession of which had cost nearly a century of efforts, discoveries, and combats, besides enormous sums of money. By that treaty, which will cover with eternal ignominy the memory of Louis XV., France yielded up to Great Britain the two Canadas, the immense territory of the northern lakes, and the rich states of Illinois, Kentucky, Tennessee, Mississippi, and Western Louisiana, as far as the Gulf of Mexico.

The Britannic frontiers, north, west, and south, were then surrounded by that French race, so antipathetic to the Saxon one. It enveloped them by its power and its immense territory, by an uninterrupted chain of fertile countries, which extend from Canada into the Gulf of

Mexico, following the interminable and rich valley of the Mississippi, which winds round the English possessions like the coiling serpent whose innumerable folds entwined the Laocoon. Unhappily for France the statesmen of her luxurious court were short-sighted in this matter; they did not know the value of our transatlantic dominions, nor foresee what the future might do for them. Occupied with miserable palace intrigues, they basely abandoned our finest colonies, and merely sought feebly to prolong their agony. Napoleon himself committed a great fault when he ceded Louisiana for fifteen millions. He thought that a bird in the hand was better than two in the bush; but what a bush he sold for such a sum! Louisiana, that of herself contains colossal wealth, did she not give birth to many powerful states by dismembering herself? Did she not draw towards Texas, Kansas, New Mexico, and California? When one thinks of this great and irreparable loss which Louis XV. and Napoleon I. caused France to suffer, one cannot help sighing at the blindness of that fatal policy, which, for the sake of passing difficulties, from pusillanimous fear, or from the want of perfect knowledge of the resources and importance of the colonies, forgets the honour and interest of the empire it rules.

It was thus that in the time of M. Laclède the Mississippi became the natural boundary of the French and English possessions; St. Geneviève was the only French settlement on the right bank of the river, all the others, being on the left, were made over to the English. After a short sojourn in that village, M. Laclède explored the country, and discovering, sixty miles more to the north, a table-land seventy-five feet above the Mississippi, and covered with forests and fertile ground, he took possession of it and laid the foundation of a town, which he named St. Louis, in presence of the French officers of the Chartres and of two

young Creoles, Messrs. Auguste and Pierre Chouteau. We had the satisfaction of seeing the latter in 1847, during the festival celebrated at St. Louis in honour of Laclède.

Scarcely was the rising colony established, which was augmented by French, Creole, and Illinois emigrants, who would not remain under the English dominion, when it was greatly alarmed by the arrival of 400 Indians, who, without being hostile, were nevertheless very troublesome, on account of their continual demands for provisions and the daily robberies they committed. M. Laclède made all possible haste to rescue his establishment from the peril that menaced it, and immediately acted in a manner that showed his tact and his profound knowledge of the Indian character. The chieftains having appeared in his presence, addressed him in these terms: — "We are deserving of pity, for we are like ducks and geese seeking clear water whereon to rest, as also to find an easy existence. We know of no better place than where we are. We therefore intend to build our wigwams around your village. We shall be your children, and you will be our father." Laclède put an end to the conversation by promising to give his answer the next day, which he did in the following manner: — "You told me yesterday that you were like ducks and geese that seek a fair country wherein to rest and live at ease. You told me that you were worthy of pity; that you had not found a more favourable spot to establish yourselves in than this one; that you would build your village around me, and that we could live together as friends. I shall now answer you as a kind father; and will tell you that, if you imitate the ducks and geese, you follow improvident guides; for, if they had any forethought, they would not establish themselves on clear water where they may be perceived by the eagle that will pounce on them. It would not have been so had

they chosen a retired spot well shaded with trees. You, Missourians, will not be devoured by birds of prey, but by the Red men, who have fought so long against you, and who have already so seriously reduced your number. At this very moment they are not far from us, watching the English to prevent them from taking possession of their new territories. If they find you here they will slay your warriors and make your wives and children slaves. This is what will happen to you, if, as you say, you follow the example of the ducks and geese, instead of listening to the counsels of men who reflect. Chieftains and warriors, think now, if it is not more prudent for you to go away quietly rather than to be crushed by your enemies, superior to you in number, in the presence of your massacred sires, of your wives and children torn to pieces and thrown to the dogs and vultures. Remember that it is a good father who speaks to you; meditate on what he has said, and return this evening with your answer."

In the evening the entire tribe of the Missourians presented itself in a body before M. Laclède, and announced to him that its intention was to follow his advice; the chiefs then begged of him to have pity on the women and children by giving them some provisions, and a little powder to the warriors. M. Laclède acceded liberally to their request, and sent them off next day well supplied and happy.

On the 17th of July 1755 M. de St. Ange de Bellerive resigned the command of the frontiers to the English, and came to St. Louis with his troops and the civic officers. His arrival favoured the definitive organisation of the colony; St. Louis became the capital of Upper Louisiana, and M. de St. Ange was appointed governor of the place.

But Louis XV. had made in 1763 another treaty, by which he ceded to Spain the remainder of our possessions in North America. This treaty, kept secret during a year, completed the measure of humiliations and of losses that France had to endure under such a reign. The official news of it was only received at New Orleans on the 21st of April 1764, and the consternation it spread throughout Upper and Lower Louisiana was such that the governor, M. d'Abadie, died of grief. Serious disturbances were the consequence, and the tragical events which took place under the command of General O'Reilly, of sanguinary memory, caused the administration of Upper Louisiana to remain in the hands of the French for several years. It was only on the 11th of August 1768 that the Spanish troops were able to take possession of St. Louis for the first time, and even then they could not hold the position above eleven months. At last, peace being restored, the Spaniards again became masters of all the country in 1770, five years before the death of M. de St. Ange, who expired at St. Louis in 1775, aged seventy-six years. M. Laclède died at the Post of the Arkansas on the 20th of July 1778, leaving no children.

In 1780 St. Louis was attacked by 1000 Indians and Englishmen, who had received orders to seize upon the town on account of the part the Spaniards had taken in the war of American independence. The French, who were always on the best terms possible with the neighbouring Indians, were far from expecting this attack, and although they were taken unawares, and had only seventy men at the utmost that could carry arms, they defended themselves with all the courage that a desperate position inspires, and put their assailants to flight, and that without the help of the sixty Spanish soldiers, who were commanded by their

captain named Lebas, and who, instead of assisting them, shut themselves up in a tower, refusing to fight.

The events that succeeded one another during the thirty-two years of the Spanish domination are too trifling to be mentioned here. Spain never sought to derive any advantage from the resources of Upper Louisiana: it would seem as if she merely considered that mighty region as a barrier against the encroachments of her neighbours on her Mexican possessions. This policy alone can explain her indifference with regard to the government of that country. When she took possession of all the territory situated to the west of the Mississippi, she found there a French population already acclimated, civilised, and inured to fatigues, owing to the long wars it sustained against the English and the Indians. The prospect of a calm and peaceable existence had assembled this population on the borders of Arkansas, of the Mississippi, and of the Missouri, where it only awaited a protecting government, to enable it to give to industry and agriculture all possible development. All that Spain had to do was to open markets for its produce, and for exchanges with the southern colonies. This extensive empire, possessing the largest natural advantages, bounded by the Mississippi, the Missouri, and the Pacific Ocean, might have, owing to the preponderance that it could have acquired (as we witness in our days), changed the course of events which have taken place in Europe since that epoch. France could not aspire to such power as long as she possessed Canada, but she should have thought of it when she abandoned that colony. The immense results obtained by the liberal institutions of the United States show clearly, in the present day, that the loss of Canada would have turned to our advan-

tage, and that by developing the produce of the possessions which we still retained to the west of the Mississippi, we should soon have been amply compensated for the sacrifices made in 1763 after the taking of Quebec. Such was the opinion of the intelligent men of France. Turgot, our celebrated statesman, in particular, foresaw the advantages to be derived from such a policy, and he even submitted a plan to the king by means of which that vast region he called Equinoctial France was to become densely populated in a short time. But, as M. Nicollet observes in his essay on the primitive history of St. Louis, he was treated as a visionary.

What was easy for France was still much more so for Spain; but instead of adopting this simple policy—liberal and grand in its results—Spain contented herself with isolating the colonists and the Indians of Missouri and of Mississippi, imposing an arbitrary government upon them, checking all communication between the neighbouring populations; establishing restrictions on importation, prohibiting foreign competition, restricting emigration, granting exclusive privileges, and making, without any conditions, concessions of lands, &c. It is not surprising, then, that she complains that her colonies cost her more than she realised by them. Nowhere, either in her laws or in her decrees, is there to be found a plan adopted with a view of developing the natural and moral resources of these countries. As the Government appeared only to occupy itself with the exigencies of each day, in like manner the inhabitants did not seem to think of the morrow. The Creoles of Upper Louisiana, who were the descendants of a brave and enterprising nation, not finding in this state of things any support for their physical and moral faculties, penetrated into the depths of the forests, got amid a mul-

titude of savage tribes whom they had not heard of before, began to explore the regions situated between the Mississippi and the Rocky Mountains, and created the fur trade in that extensive portion of North America. In this way was formed that class of intrepid men called *voyageurs* or *engagés*, of whom we have already spoken, and who were as necessary in the plains of the West as are the Canadian *voyageurs* in the frozen countries of the North and North-west.

Meanwhile America had attained her independence, and France was commencing her revolution; when, all of a sudden, on the 9th of July 1803, at seven o'clock in the evening, the inhabitants of St. Louis learned that Spain had re-ceded Louisiana to Napoleon, who, in turn, had sold it to the United States. We will make no remark on the profound sensation produced by this unexpected news. We will merely observe that the colonists could scarcely recover from their astonishment on hearing that they had become republicans, and seeing a multitude of judges, lawyers, notaries, tax-gatherers, &c., arriving among them. They were even less able to understand that liberty which obliged them to leave their homes to vote at elections, or to serve as jurors. They had allowed civilisation to advance without taking any notice of it. Their existence was so isolated, so simplified, that they lost sight of the advantages of social life. They possessed no public schools, and the missionaries, being too few in number, were seldom able to visit or instruct them in their religious duties. The object of their material life did not go beyond the domestic circle, the virtue and honesty of which were proverbial. They knew nothing of notaries, lawyers, or judges; and the prison remained empty during thirty years. To give an idea of the simplicity of the Creoles, we cannot

do better than relate an incident that took place a few years after the cession of Louisiana to the United States.

A Creole from Missouri was lounging about a sale of negro slaves on the borders of the Mississippi, in Lower Louisiana. The merchant, who was from Kentucky, asked him if he wished to buy *anything:* "Yes," replied the Missourian, "I want a negro." Having made his choice, he inquired the price of the one he selected. "Five hundred piastres," replied the merchant; "but, according to custom, you have one year to pay." At this proposition the purchaser became embarrassed; the thought of being liable to such a debt during an entire year annoyed him greatly. "No, no!" said he to the merchant; "I prefer paying you at once six hundred piastres, and letting the matter be ended." "Very well," said the obliging Kentuckian, "I will do anything you please to make the affair convenient to you." And the bargain was concluded.

The Spanish troops departed from Louisiana on the 3rd of November 1804. The American governor, W. H. Harrison, who had the chief command of the Indian territories of Upper Louisiana, organised the civil and judicial power of that country; and on the 2nd of July 1805 General James Wilkinson established there, by order of Congress, a territorial government, of which St. Louis was the capital. At length, in 1820, the territory of Missouri became a State, and its constitution was sanctioned by Congress in 1821.

The geographical situation of St. Louis has made it the most important town of the West, and, as it were, the door opening to the great deserts of the West and North-west. It is in this noble city that the trappers assemble to lay in provisions before penetrating into the soli-

tudes: it is hither also they bring their furs, and expend in a few days the money they had earned at the risk of their lives during their long excursions. It is also from St. Louis that the steamboats engaged by the great fur companies start to transport into the Indian countries merchandise, which is exchanged for skins of all sorts. It will also be from hence that we shall start to make our readers acquainted with the principal curiosities of the wildernesses of the North-west watered by the Mississippi and the Missouri.

Next to the countries we have just described, one of the new States of the American Union which is the least known and the most interesting is certainly Minnesota; it is also one of those that exhibited to us the greatest amount of wild poesy in its primitive nature; it is, besides, one of the richest in legendary lore and in historical souvenirs. Minnesota covers an extent of upwards of 198,000 square miles of excellent ground, composed of beautiful prairies, interspersed with magnificent forests. All kinds of corn grow there abundantly, and in the valley of the Red River, as far as 50° of N. lat., and even still farther, very fine Indian wheat is continually cultivated. The crops are generally regular and good: indeed, with a few exceptions occasioned by inundations, they never fail.

Compared with the banks of Lake Superior, the southern portion of Minnesota is the Italy of those regions. To agriculturists it is most important; for few countries of the north are as well adapted for the culture of maize. The borders of the St. Pierre or Minnesota, the St. Croix, the Rum, the St. François, the Rivière à Jacques, and of their tributaries, the banks of Lac Pépin, Lac qui parle, Lac des Bois, and several others, are of a truly extraordinary botanical richness and

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power of vegetation. The maximum of the temperature of summer at Minnesota is 88° Fahr. and the minimum is 47° below zero. Thunder is very frequent in those latitudes. Currents of air, doubtless produced by the bursting forth of the liberated electricity, temper the excessive heat of summer.

But before speaking at greater length about the configuration of the country, we shall say a few words concerning the origin of the name that was given to this vast territory, comprised between the Wisconsin, the Iowa, the Nebraska, and the British Possessions.

The word Minnesota (pronounced Minnisotah) is borrowed from the Sioux language, and is derived from *minni*, which means water, and *sotah*, which signifies whitish. The sky in that part of America is more of a whitish than of a bluish colour; and the Indians, in calling Minni-sotah the principal river (formerly designated under the name of St. Pierre) which waters the territory, wished thereby to indicate that it had the peculiar tint which the firmament presents in these charming regions.

It was a Frenchman, named Lesueur, who discovered this river towards the year 1683. He called it St. Pierre, in remembrance of a celebrated captain who was at the head of a French Residence on the borders of Lake Pépin. It was only in 1852 that a decree of the Legislative Assembly officially changed the name of St. Pierre to that of Minnesota. This river has its source on the eastern slope of the head of the Coteau des Prairies, towards 46° of N. lat. and 97° of W. long., Greenwich meridian. It first takes its course towards the south-east, and flows into the Big Stone Lake, which it traverses to throw itself anew into the little Lac qui parle; then it descends towards the south, receiving many tributaries, after which it takes

an eastern direction, ascends to the north-east, and finally falls into the Mississippi a little above the St. Anthony Falls.

Not being able to speak of all the curious sites, of all the natural beauties, to be found in Minnesota, nor of the interesting excursions that may be made there, we shall limit our task to gleaning from memory the facts that have made the deepest impression upon us.

Among the latter, the most cherished was a visit to the sources of the Mississippi, and to the Carrière des Pipes Rouges (Red Pipe-stone Quarry) of the Coteau des Prairies, a celebrated quarry, of which we shall speak at full length hereafter.

From St. Louis it is first necessary to ascend the Mississippi as far as the St. Anthony Falls, that is to say, for a distance of about 612 miles. Formerly this passage was effected in two months by means of flat-bottomed boats, which were sometimes towed, and sometimes moved on by the help of long sails or of oars. Now there is a more or less regular service of steam-boats, that go in a few days as far as Fort Snelling, situated near the Falls.

The banks of the Upper Mississippi are remarkably beautiful, and render this journey most attractive. The river is hemmed in by an almost uninterrupted succession of steep hills of curious forms, intersected by glens wherein grow shrubs of all sorts. At times the hills become lower, as if to make way for a cordon of rocks from thirty-two to forty feet in height, that appear in the Mississippi, and resemble architraves, or truncated cornices, cut at equal distances; you would fancy you beheld a colossal temple half-buried under the water. The plains that are beyond the banks of the river and on the high lands are covered

with thick herbage and luxuriant pasturage, and are studded with clusters of trees. It is on the borders of this river, about midway between Fort Snelling and St. Louis, that M. Dubuque, one of the first pioneers of the west, desired to be interred, or rather exposed; for, in compliance with his orders, his body, wrapped merely in a winding-sheet, was placed on a very lofty hill which commands one of the finest views in the world. A few years since the skeleton of that singular personage was yet to be seen on the rock.

Although the Mississippi is truly as fine as it is grand during its entire course, owing to the originality of its sites, nevertheless it fatigues the admiration of the tourist who only ascends it from Balise to St. Louis, that is to say, for 1312 miles; but from St. Louis to the St. Anthony Falls, during a distance of about 712 miles, the magnificence of the river is such, that the most exalted imagination could not conceive anything like it. The most indifferent traveller is in a perpetual state of ecstasy, from the embouchure of the Wisconsin to beyond Fort Snelling, where the Mississippi ceases to be navigable on account of the Falls. No matter what the weather may be, or at what season of the year, you feel yourself as if nailed to the deck of the steam-boat, which at each moment unfolds to the gaze new scenes, strange pictures, unheard-of panoramas, that cannot be described, because they are neither picturesque nor romantic, nor of any style or genus known in our old Europe. The landscapes of the Upper Mississippi are of a wild sublimity that can bear no comparison.

The height of the banks of the river, in different places, renders this country most important in an industrial point

of view. The falls and cascades that are frequently to be met with might serve as hydraulic motors for numerous manufactories. The forests of lofty trees might also be used for buildings, in sawing-mills, or for fuel. These regions, besides, are already invaded by the Whites, who will easily cultivate them. Whether wooded or not, the soil is ever covered with greensward; the hillocks which rise like immense domes at each side of the Upper Mississippi, and the enormous ramparts that confine its bed in some particular sites, are also clothed with thick turf, which gives a softer and more pleasing appearance to its outlines: it has not the solemn and awful aspect of the grand spectacles which the Alps and Pyrenees present; but it affords something more tender and veiled, that speaks less to the imagination, but goes more directly to the heart.

Before arriving at Lake Pépin, by ascending the Mississippi you pass four large rivers, — the Illinois, the Des Moines, the Rock River, and the Wisconsin, — which furnish their contingent to the Father of Waters. It is at the delta formed by the Wisconsin and the Mississippi that is situated the Prairie du Chien, one of the most beautiful landscapes of that country. In this spot is one of the first and largest establishments belonging to the fur companies; but since the Indians and the game are disappearing so rapidly from these deserts, it has lost much of its former importance. In the prairie may likewise be seen an American fort, and about fifty families of French origin, the majority of whom are trappers, merchants, or voyageurs. A hundred miles higher commences a series of plateaus, or of hills, that are so many magnificent observatories, from the top of which you have a commanding prospect of the vast plains. Historical souvenirs are attached to these heights, the

principal of which are Pike's Tent, La Montagne qui trompe, Le Cap à l'Ail, and the Lover's Leap ; the latter is a huge steep rock, from the peaked summit of which a young Indian girl of sixteen years old precipitated herself in the presence of her assembled tribe, rather than be united to a man to whom her father had promised her in marriage.

Close to Lake Pépin, traces of an ancient intrenched camp have been discovered, the origin of which is still a mystery to the American archæologists. You may also perceive there the ruins of several forts and dwelling-places of the time of the French sway. M. St. Pierre had in that spot a spacious depôt of different sorts of merchandise, which he exchanged for furs brought to him by the Dacotas. It is also at the southern extremity of the lake, in a place called Pointe au Sable (Sandy Point), that the French, under Fontenac, who had just driven the Foxes from the Wisconsin, established intrenchments to secure themselves from the incursions of the savages.

Proceeding a little farther to the left, but still ascending the Mississippi, you reach the mouth of a little river, which, if not discovered, was at least baptised by the celebrated La Hontan, who gave it his own name : it used to be called Rivère aux Canots (Canoe River), when that country belonged to France ; for it was among the rushes and willows with which the banks are covered that the hunters and merchants hid their canoes. At a later period, the English and the Americans changed the word *canot* to that of *cannon*, which is merely a corruption of the first. In the last century, the Sioux called it Inyan Bosndata, that is to say, Standing Rock, owing to a natural obelisk that is situated in a fine plain five mile

north of the river, near the spot where it is fordable. This rock is formed of a single block of sandstone, thirty-six feet high, and resembles the pillars that workmen leave to mark the depth of the excavations they make in the ground. It is a precious relic of the superior layers of the first formations, before this country was devastated by the elements that have altered its original level. Twelve miles north of the natural obelisk you also see other evidences of the denudation of the surface of the earth. One of them is very remarkable, owing to the symmetry of its lines and odd appearance of its design; it was called La Colline du Château (Castle-Hill), on account of its perfect resemblance to the ruins of a manor-house of the feudal times.

Towards the same latitude as that of the Colline du Château, on the left bank of the Mississippi, begins Lake St. Croix, which the river of that name traverses in all its length, as it rolls on from the Wisconsin, and previous to its falling into the Père des Eaux (Father of Waters).* The name of St. Croix was given to this river in memory of a celebrated traveller who was wrecked at its embouchure after a long and perilous voyage. When the waters are low, you can see, at the southern part of the lake, a dangerous sand-bank, to which is attached an Indian legend.

"Two Dacota warriors were travelling together along the borders of the lake: one of them had made a vow never to eat any meat that had touched water. Overcome by hunger, they began to pursue a badger that they thought they saw directing itself towards a hollow tree. On looking into the tree, he who had made the vow

* Name for the Mississippi.

perceived that the animal to which they had just been giving chase was a fish and not a quadruped. He hesitated a moment to consider what he should do; but his appetite soon surmounted his scruples, and the fish was caught, roasted, and eaten.

"After the repast hunger made way for thirst. The prevaricator prayed his companion to bring him a little water to refresh his swollen throat, but the more he drank, the more parched he became; then, to quench his thirst more easily, he jumped into the lake and drank for a long time, when all at once he called his friend, saying to him: 'Come, and look at me.' The latter thought he should have died with fright, on beholding the spectacle that presented itself before him. His friend was becoming metamorphosed into a fish with fearful rapidity. At last, when the metamorphosis was complete, the unhappy Indian fish laid itself across the lake, and formed ever since the sand-bank called Pike."

The Dacotas firmly believe in the truth of this legend, which was originated by their tribe, and they have named the lake and river Hogan-onannki-kin, "the place where the fish rests."

A few miles farther, but still on the left bank of the Mississippi, you descry St. Paul, a new American city which affords but little interest for tourists; but from St. Paul you can take a trip to the famous grotto called Ouakantipi by the Indians, and Carver by the Americans. This cave is situated about thirteen miles on this side of the Falls of the Mississippi; for above thirty years the entrance was stopped up by the falling in of the calcareous stones that crown the grit rocks in which the grotto is hollowed. The opening is less than six feet in width by nine to twelve in height; it is imme-

diately followed by a spacious hall, fifteen feet high by thirty wide, and of equal depth, having its floor covered with fine white sand. At the extremity of this hall commences an immense lake, the extent of which is as yet unknown; the water is pure and clear. When stones are thrown into this lake, they produce a terrific noise, which the echoes of these sombre regions repeat in the distance. The Indians who visit this obscure den never fail to throw something into the water as a sacrifice to Wakan-tipi, the spirit of the grotto. The partitions of the roof are almost entirely ornamented with ancient Indian hieroglyphics, that are half concealed by the moss.

Close to the Ouakantipi is situated the cemetery of several savage tribes, who regularly convey the bones of the dead thither before emigrating to other countries.

The mouth of the St. Pierre, or the Minnesota, is just opposite the cemetery; and, near the point of the delta formed by this river and the Mississippi, the Americans constructed, in the year 1819, Fort Snelling, the last station for the steam-boats, which ascend one of the largest rivers of the world. This fort, erected on a plateau about one hundred and twenty feet high, is as romantic as it is imposing. It is composed of large barracks and of numerous edifices, surrounded by thick walls, and some clusters of trees, beneath which Dacotas are often to be seen promenading.

Previously to the organisation of the territory of Minnesota, in 1849, this fort was the only important establishment to the north of the Prairie du Chien. During many years it was the rendezvous of the missionaries, of savants, and of a few mercantile adventurers, who went there to make preparations for their journey to the Dacota villages. This spot is celebrated in the annals of

the desert. It was on the island opposite the fort that Major Pike encamped while he negotiated the purchase of the land. Since the construction of this fortress, many tragedies have taken place in that little corner of the earth, which would be too long to relate ; we shall now occupy ourselves exclusively with the charming trips that are generally made by visitors to Fort Snelling.

CHAP. XVII.

ST. ANTHONY FALLS. — THEIR DISCOVERY BY HENNEPIN. — INDIAN LEGEND. — EXCURSION TO THE SOURCE OF THE MISSISSIPPI. — LAKE ITASCA. — MR. W. MORRISON'S LETTER. — MINN-I-HA-HA. — TRAVERSE DES SIOUX. — MANKATO. — THE ONDINE REGION. — COTEAU DES PRAIRIES. — RED PIPE-STONE QUARRY. — INDIAN TRADITIONS. — GEOLOGICAL PHÆNOMENA. — THE DEVIL'S LAKE. — COTEAU OF THE MISSOURI. — VALLEY OF THE UPPER MISSOURI. — SHINING MOUNTAINS. — REMINISCENCES, AND END OF OUR JOURNEYS.

Among the numerous excursions that may be made in these regions, the most interesting is indisputably the one that leads to the St. Anthony Falls, situated eight miles beyond Fort Snelling. In this spot the Mississippi falls from a height varying from fifteen to twenty-four feet, into a bed of rocks, amidst grand and truly picturesque scenery. Travellers in general do not agree respecting the height of these Falls, which vary according to the rising and lowering of the waters of the river. They are about three quarters of a mile in breadth. The soil round the cataract is slightly undulating, and covered with luxuriant herbage, studded with trees.

Formerly there was a small island in the middle of the cascade, as also a huge rock which lay on the very edge of the fall. Of late years many changes have taken place in its details. Successive fallings in of the table-land over which the Mississippi rolled, caused the cascade to recede from the island which

VIEW OF THE SHINING MOUNTAINS.

had divided it into two portions, and the rock, undermined by the current, was engulfed in the abyss hollowed out by the action of the waters. The geological character of the bed of the river is such, that a subterraneous working, which continually wears away the banks, can easily be perceived.

Within the last two years the Falls have receded several feet, and it seems most probable that they were even at the embouchure of the Minnesota a few centuries ago. They are powerfully aided in this retrograde movement by the quantity of pines that the Mississippi drifts along. These trees, being thus violently dashed against the rocks or into the crevices, serve as battering-rams and levers to destroy the one and enlarge the other.

The cascade is divided into two parts by the island of Hennepin, which, though narrow, is yet very long, and covers a superficies of about fifteen acres. The western portion is much wider, and its level is more elevated than on the opposite side. This difference of level is simply occasioned by the volume of water being more considerable in the former part than in the latter. A little above the island of Hennepin is situated that of Nicollet. These names were given in memory of two celebrated travellers, who, within less than two centuries from each other, visited and inhabited Minnesota. The island of Nicollet extends over an area of about forty acres, and is one of the most enchanting summer residences to be found throughout those latitudes.

The first white man who ever beheld the St. Anthony Falls was, doubtless, Father Hennepin, of the order of the Ricollets. He visited them in the year 1680, on his return from an excursion to Mille Lac, or the Rum, one of the tributary streams of the Mississippi. Hennepin

gave the name of St. Anthony of Padua to this cascade, as a token of gratitude for the many special favours he had received from heaven through the intercession of that saint. After Hennepin, Charlevoix is, perhaps, the only European who, under the French rule, saw the St. Anthony Falls. Jonathan Carver was the first draughtsman that sketched this splendid view in 1766, and on his return to England had it engraved in London.

As Hennepin was crossing the Mississippi, near the island that bears his name, in company with a party of Dacota buffalo-hunters, he saw one of these savages standing on an oak at the opposite side of the grand cascade, and weeping bitterly. He wore a very handsome beaver-skin robe, lined with white, and covered with embroidery wrought in porcupine quills. The Indian threw his beautiful robe into the river, hoping by such a sacrifice to render the Spirit of Waters propitious to him. "O thou," said he, "who art a spirit, grant me the favour that those of my nation may always cross this cataract without incurring any accident; that our warriors may kill buffaloes in abundance; may they vanquish our enemies, and bring prisoners to thee, whom we will sacrifice in thy presence! The Foxes have slain our kinsmen; graciously enable us to revenge ourselves upon them." This sort of sacrifice is of frequent occurrence, as the savages often cross the Mississippi at this height.

The little island above alluded to, and which was formerly in the middle of the cataract, was called the Isle of the Spirit, on account of a legend which relates that sometimes in the morning may be seen, above the Great Fall, the ghost of an Indian woman carrying an infant in her arms, whom she presses to her breast; meanwhile she sings, and steers a skiff made of bark, which is soon

swallowed up in the foaming waters. We here give the translation of the principal passages of this singular legend.

"An-pe-tu-sa-pa-ouinn opened her eyes to the dawn of life long before the canoes of the white men were rowed over the waters of the Mississippi, long before their gaze had beheld the flowers that adorn those vast and beautiful plains. She passed into girlhood, and from the morning's light until the shades of evening she partook of the fatigues and dangers of the other virgins of her tribe. She would swim without fear amid rapid currents, and learned to guide her frail canoe, in which she glided lightly over the waves of the torrents, or over the rippling lakes. She acquired the knowledge of tanning the deer-skin, and also dyed the bison's hide in various colours, and would then cover it with fantastic designs. She always prepared the tent for the repast, and was accustomed to cut her food with an ivory knife. She cleaved wood with a stone axe, and was in every respect inured to the rudest savage life.

"In a vessel made from the bark of the birch-tree she boiled her food with hot stones. She caught fish with bone hooks. With the quills of the porcupine she embroidered gifts for the beings she loved. In the blooming meadows she bounded about with her young companions, and often did she carry off the prize in the race. She was taught to fear the Ojibbeway, and would dance joyfully round his scalp; frequently, either by agility or cunning, she escaped from the lance or the arrow of that terrible enemy.

"In this manner, with a heart sometimes gay, sometimes sad, she went through the trials of her young existence. At length the day arrived, when, uniting herself to the warrior of her choice, the nuptial joys and those of maternity caused her heart to swell with delight. But,

alas! great happiness is the prelude to great suffering; the greater the joy, the more deep and intense the grief, and deceived love can change into hatred. He whose smiles she cherished more than life itself, he for whom her heart overflowed with affection, forgot her for an impure love which he found away from her.

"An-pe-tu-sa-pa-ouinn saw that ungrateful, that false one, forsake and despise her. What were, then, her thoughts? No one knew. No Indian ever saw tears in her eyes; her lips never betrayed her feelings; her bosom never revealed a sigh; long did she conceal her anguish and her sorrow. One day her tribe pitched its tent on these green and lovely banks, close to the spot where the foaming Mississippi precipitates itself with a crashing noise. An-pe-tu-sa-pa-ouinn was there, painting her face in bright colours; she had her babe in her arms.

"Why does she plait her flowing locks, as in the day of her nuptials? Why does she thus put plumes on the head of her child, as for a day of festivity? See, see! she enters her canoe, and placing her infant at the prow, she leaves the shore in profound silence. Her hand is steady as she plies the flexible oar; no tear glistens in her eye; the skiff darts through the waters as if flying towards the Falls, as if flying towards the abyss.

"An-pe-tu-sa-pa-ouinn's friends call to her in vain; calmly she pursues her terrible route, without even turning her head to take a last glance. All tremble with horror; she alone betrays neither fear nor emotion. She reanimates the courage of her timid infant with the most endearing and tender words, with her sweetest voice. The spouse, the father, is there; despair in his heart on beholding his child so full of life, and yet so near to death.

"Still the bark glides on, faster and faster, drifted by

the waves and urged forward by the oars; it would not go so swiftly were death behind it and life before. But they approach the gulf; henceforth no human power can save the two victims. An-pe-tu-sa-pa-ouinn begins her death chant; her clear vibrating notes are heard above the roaring torrents; her fine sonorous voice is wafted by the breeze. . . .

"Hearken no longer, young warriors; the chants that caused you to weep have died away in the rolling waters. The mother and child are no more; they now lie in an obscure cavern, unknown to all, sleeping the sleep of death. . . .

"Fragments of the skiff alone were found; but when the sombre night wraps its thick veil round the trees of the island, when the wind howls and blows fiercely over the mighty river, a sad yet sweet voice is heard in the air, murmuring a song. It is said to be An-pe-tu-sa-pa-ouinn repeating her death chant."

This legend, which we have translated almost word for word, is very ancient, and the Dacotas seldom fail to relate it, when, in their company, you visit the St. Anthony Falls.

The Sioux and Chippewas inhabit this neighbourhood, and the American soldiers of Fort Snelling are specially charged to see that peace is not disturbed between these two tribes. When the Indians wish to ascend the Mississippi beyond the Falls, they are obliged to make a *portage*, that is to say, to transport their canoes and merchandise by land.

From the mouth of the Minnesota to that of the Crow-wing River — that is to say, for 146 miles — the valley of the Mississippi is wide; its banks are rather low, and form, as they recede, a succession

of terraces of a most imposing aspect. Numerous rapids interrupt the navigation of the river. The soil is sandy, and covered with lime, birch, and walnut-trees. On the eastern side of the Mississippi, between the third rapid and the Pikwabik stream, a great mass of sienitic rocks, with flesh-coloured feldspar, may be seen stretching over a space of a mile and a half, and varying from twenty-five to thirty yards. A little above these rocks, opposite the Knife Rapids, are springs that carry along with them very fine sand, which is shining and blue, mixed with a soft unctuous substance. The account given by Messrs. Schoolcraft and Nicollet of their journey to the source of the Mississippi is so well known that we deem it unnecessary to give any further details on the subject. We shall merely remark, that from the Crow-wing River to the Leech Lake the roads are invariably travelled with difficulty, on account of the continual portages that you are obliged to make to convey the canoes and luggage from one lake to another.

The shortest route, geographically speaking, is that of the Pine River. The Leech Lake is one of the largest lakes of this region, where lakes may be counted by thousands: you leave it in the rear to arrive at Lake Kabekonang, and finally at that of Assawa. From Lake Assawa to Lake Slasca, where the source of the Mississippi is supposed to be, you are obliged to go on foot: happily the distance does not exceed six miles. It is first necessary to traverse a small marsh before you reach a rising ground overhung with larch-trees and white cedar, which is immediately followed by a shoal full of dead trees, that are either on the ground or crumbling to dust, owing to their great age; above the trees, a humid and grizzly carpeting of moss and other parasites unfolds itself to the view; it is

a young forest springing up over the remains of a forest that has been buried for centuries. The rest of the route presents a gravelly soil, which to all appearance has once been washed by the waters of the ocean.

Lake Itasca lies about 337 miles from the Gulf of Mexico, and 1425 feet above the Atlantic. Among the plants that are to be found on a little island situated to the north of the lake, the most remarkable are *Microstylis ophioglossoïdes*, *Physalis lanceolata*, and *Silene antirrhina*. Its geological situation is in 47° 13′ 35″ N. lat. and 95° 2′ W. long. (Greenwich meridian). The Mississippi, at its going out of the lake, is five yards broad by a foot and a half deep.

We corroborate M. Nicollet's statement that the source of the river is not in the lake, but in the high grounds that surround it. This plateau, which rises 90 or 100 feet above the level of the waters in its vicinity, is covered with thick forests, wherein the coniferous trees predominate, and contains innumerable sources which supply the lakes. It becomes ramified towards the north, east, and south-east, and forms round Lake Itasca a semicircle, from whence gush five streams that flow into the lake. The source of the Mississippi is to be found in the neighbourhood of the lake, but not in the lake itself. M. Nicollet, with much modesty, attributes the discovery of this source to Mr. Schoolcraft; but in the historical annals of Minnesota we find a letter written to Mr. Allan Morrison which proves that it was his brother William who made that important discovery. According to the documents we have consulted on this subject, it may be certified that Mr. W. Morrison was the first who discovered the source of the Mississippi, Mr. Schoolcraft the first who visited it officially, and M. Nicollet

the first that examined it scientifically. We shall here quote Mr. W. Morrison's letter, from the Annals of the Historical Society of Minnesota: we give it by way of confirmation :—

"*Allan Morrison, Esq.*

"Dear Brother,—In answering your favour of the 10th January, I will omit several incidents that I presume you are well informed of, and give you the time and circumstances that led me to be the first white man that discovered the source of the great Mississippi River. I left Grand Portage, on the north shore of Lake Superior,—now the boundary-line between the United States and the British possessions,—in the year 1802, and landed at Leech Lake in September or October the same year. I spent the winter on one of the streams of the Crow-wing River, near its source. In 1803 and 1804 I wintered at Rice Lake. I passed Red Cedar Lake (now called Cass Lake), followed up the Mississippi as far as Cross Lake, and then to Elk Lake (now called Itasca Lake), the source of the great River Mississippi. A short distance from this side I made a portage to get to Rice River, which is called the Portage of the Heights of Land, or the dividing ridge that separates the waters of the Mississippi and those that empty into the Red River of the north; from thence to Hudson's Bay the portage is short.

"I discovered no traces of any white man before me when I visited Itasca Lake in 1804. And if the late General Pike did not lay it down as such when he came to Leech Lake, it is because he did not happen to meet me. I was at an outpost that winter. The late General Pike laid down Cass Lake on his map as the head of the Mississippi River. In 1811–12 I went the same route, to winter on Rice River, near the plains. There I overtook a gentleman with an outfit for Mackinac, by the name of Otessee, with whom I parted only at Fond du Hac, he taking the southern route to Mackinac, and I the northern to head-quarters, which had been changed from Grand Portage to Fort William. This will explain to you that I visited Itasca Lake

(then called Elk Lake) in 1803-4 and in 1811-12, and five small streams that empty into the lake; they are short, and soon lose themselves in the swamps.

"By way of explanation, the late General Pike, then Captain Pike (in 1805), who had orders to trace the Mississippi to its source and was stopped by the ice a little below Swan River (at the place since called Pike's Rapids, or Pike's Black House), had to proceed from thence to Leech Lake on foot, and learn there where the source of the Mississippi was. He went to Cass Lake, and could proceed no farther. He had been told that I knew the source, but could not see me, I being out at an outpost. This want of information made him commit the error; some person, not knowing better, told him there was no river above Cass Lake. Cass Lake receives the waters of Cross Lake, and Cross Lake those of Itasca Lake and five small lakes that empty into Itasca Lake (then called Elk Lake). Those streams I have noted before; no white man can claim the discovery of the source of the Mississippi before me, for I was the first that saw and examined its shores.

"Yours, &c.

"WM. MORRISON."

After a trip to the source of the Mississippi there only remains a visit to Pipe-stone Quarry, and then to return to St. Louis by descending the Missouri. It is necessary to start again from Fort Snelling, to commence a new excursion, which is most interesting in every point of view.

Between Fort Snelling and the Lake of the Islands, that is quite close to the St. Anthony Falls, may be seen one of the grandest cascades, of which that beautiful country may well be proud. It is called Minn.I-ha-ha (laughing waters). I-ha-ha is a Dacota word, which signifies "to laugh." That name was given to it on account of the similarity between the noise of its waters and peals of laughter. This cascade is formed by the fall of the waters of the Harriet Lake,

that empty into Lake Calhoun. Nothing can be more graceful than the enchanting banks of these solitary spots.

If the Niagara symbolises the sublime, and the St. Anthony Falls the picturesque, the I-ha-ha symbolises natural beauty in its most poetic simplicity. The height of the cascade is calculated to be about sixty feet; the water emerges from a bed of verdure half-concealed by willows and oak, and in one bound precipitates itself from the top of a perpendicular rock into a narrow but deep basin, shaded by gigantic trees.

To go to the Coteau des Prairies from Fort Snelling, you can embark on the Minnesota and ascend the river as far as the Traverse des Sioux, that is to say, for a distance of about 116 miles.

The breadth of the Minnesota at its embouchure is 195 yards; in some places its banks are upwards of one hundred feet above the level of the water, and form slopes, or terraces, which are covered with fine grass, and dotted with clumps of willows, birch-trees, and oaks. The entire valley is extremely fertile, and presents a smiling yet wild aspect; the ground is excellent, and thickly wooded; cotton-trees, some of which attain a prodigious height, are also to be seen there. As its name indicates, the Traverse des Sioux is greatly frequented by the Indians, who usually cross the Minnesota at that point. A mile from this kind of ford, the ruins of an Indian camp are observable on the borders of the river; as likewise numerous heaps of stones and rubbish, which point out the site and form of the dwellings. The Dacotas, on whose territory the ruins are situated, cannot possibly state by what tribe this camp was erected.

The last heights of the Coteau des Prairies terminate to the right of the Traverse des Sioux; and to the left begins the region called Ondine by Nicollet. The

land of Ondine is watered by innumerable navigable rivers, that derive their sources from the lakes, and then empty into the Mankato, forming at the same time an immense aquatic fan. The group of lakes is surrounded by woody hills or very fertile meadows, whose appearance is as picturesque as it is graceful. There, all is modest, soft, and sad; the sun caresses with its gilded beams the rocks, the waters, and the cedars; its refulgence imparts life to these beautiful wilds, without causing them to become barren; here, the moon sheds a paler and more mysterious gleam than in the other solitudes, when covered with the shadows of dusk; the breeze gently bends the stems of the plants and flowers, but it is with a tender voluptuousness, like a mother's kiss on the cherry lips of her first-born. The waves sigh as they die away on the beach, but theirs is a harmonious murmur, and not a melancholy moan: the raindrops, in falling, ripple the surface of the lakes, but they neither sadden nor disturb the limpidness of the waters: all the voices of nature are borne into space, and are lost without echo in the void. Truly it is in this spot that the charming fairy tribes of the Ondines, as also the genii of the waters, must have chosen their fantastic dwelling; for there is not a lake or rivulet that has not some poetic legend attached to it, concerning the mutinous spirits of this favoured region.

The Mankato takes its rise at the foot of a semi-circular plateau called Mini-Akipan-Kaduza; that is to say, "water that flows at the opposite side." It is navigable a few miles from the plateau, and its current becomes extremely rapid as it approaches the Minnesota. Its narrow bed is enclosed between wall-like banks, from sixty to ninety feet high, which are well wooded, as is

also the valley of the Mankato. On the left bank of the river, and eight miles from its mouth, in an eminence composed of calcareous and sandstone rocks, you perceive cavities containing the famous blue or green earth out of which M. Lesueur extracted the 400 lbs. of brass that he sent to France in the year 1700. The Sioux use this earth as a dye-stuff; it is massive, rather plastic, and impregnates the air with an argillaceous odour. Acids have no action on it; its greenish-blue colour is caused by peroxide of iron.

The portion of the Minnesota that is watered by the Mankato and its tributary streams surpasses in riches all the American territories situated above the 43° of N. lat., by the quantity of its woods and the fertility of its soil. The forests are composed of maples, black walnut-trees, red elm, lote-trees, red and white ash, pines, cedars, oak, and all sorts of shrubs, among which may be distinguished different sorts of hawthorn and wild roses. Ferns, Leguminosæ, Orchideæ, and other very curious plants, mingle their hues with the turf of the prairies.

Having crossed the St. Pierre, or Minnesota, you ascend the valley of the Waraju, as far as the Shetek and Selican Lakes, beyond which is the source of the Moingonan, called La Rivière des Moines by the French, one of the finest and most important tributaries of the Upper Mississippi. The name Des Moines is a corruption of Moingona, derived from the Algonquin word *Mikonang* (the road); at a later period it was referred to the Trappist monks, who dwelt in the northern regions of this part of America. The river is 412 feet in length, embedded between the valley of the Mississippi and that of the Missouri; it has but few tributaries, nevertheless, in spring it may be navigated by flat-bottomed boats.

At a very short distance beyond the source of the Rivière des Moines, you perceive the celebrated Red Pipe-stone Quarry of the Coteau des Prairies.

The greater part of the basin of the Upper Mississippi is separated from that of the Missouri by a lofty table-land, which, seen from the valley of St. Pierre on the east, or from the Rivière à Jacques on the west, bears so striking a resemblance to a far-off bank or ridge, that this circumstance caused it to be denominated the Coteau des Prairies. It extends from 43° to 46° N. lat. Its length is 200 miles, and its width varies from fifteen to twenty-four miles towards the north, and forty towards the south; its greatest height above the level of the ocean is 1920 feet. This Coteau, properly speaking, is a range of hills stretching out from north to south, and rising in the middle of an immense plain, which gradually lowers as it advances towards the east and west. The summit of the table-land is wavy, bedecked with clusters of trees, furrowed by ravines, and covered with pasturage, granitic sand, and agates. From this Coteau spring forth the sources of the Rivière des Moines, the Rivière à Jacques, that of the Sioux, and a branch of the Red River of the north. Its flora and fauna are almost the same as those of the Ondine region, to which may be added mimosas, willows, Virginia strawberries, and the trefoil of the buffaloes, besides the mustard plant, amaranthus, and psoraleas.

The plain to the north of the Coteau is a magnificent undulating prairie, cut up by streams and lakes; the latter abounding in all kinds of fish. This country is probably the highest between the Gulf of Mexico and Hudson's Bay. From the different summits of the loftiest hills, you descry vast horizons of most remarkable beauty. The

western part, in particular, affords views and perspectives of inconceivable grandeur, which extend from the basin of the Red River of the north, on one side, as far as the Hauteur des Perres, on the other, where the source of the Mississippi is to be found.

The southern portion of the Coteau des Prairies is less diversified, woods and lakes become more rare; but, when they are united in the same spot, they form a kind of oasis, the effect of which is most picturesque and graceful.

These oases are always in the middle of swampy ground, but which is, nevertheless, very rich and abounding in game. Few countries contain such elements of prosperity as this; few can offer more agreeable situations for agricultural colonists. Formerly the borders of all those lakes were inhabited by numerous sections of the Sioux nation. Those who are inclined to establish themselves in these latitudes might easily acquire wealth, not only by husbandry, but also by rearing large flocks of sheep and herds of cattle, which could be effected without expense or risk, for these extensive meadows are ever covered with the most luxuriant pasturage.

The valley of the Red Pipe-stone Quarry is situated southward of the Coteau des Prairies, a little below 44° N. lat., and between 96°. and 97° W. long.; this valley has the form of a cradle or of an ellipse, three miles in length by one in width. The western side of the quarry is composed of close-grained quartz, or a sort of red steatite, which rises perpendicularly to a height varying from thirty to forty-five feet. The rocks are of a bright red, polished and shining. Some of them bear traces of ancient and modern hieroglyphics, which are cut or painted on the rock. They are mementoes left by the Red Skins, each time they went on a pilgrimage to seek the materials with which they make their pipes, ear-

rings, and other ornaments of this kind. Several tombs are also to be seen there, as also the ruins of monuments, which either served as fortifications or as sepulchres for illustrious warriors.

The old Indians assert that the discovery of this quarry is owing to the annual migrations of the buffaloes, and that the hunters in following the track traced out by the passage of these animals, were led to the Fountain of the Pipes (so called by the savages): whatever be the cause, the pathway formed by the migration of the buffaloes is still visible.

Every year the neighbouring tribes make a pilgrimage to the Red Pipe-stone Quarry. This place is greatly frequented by Indians, who go thither from all parts of the American continent. Therefore, it is neither safe nor easy for white men to go there, because the red people are jealous of their rights and privileges, and look upon the possession of that soil as their exclusive property, given to them by the Great Spirit. They consequently consider the presence of the Pale-faces in that locality as an intrusion, and even as a profanation, which would inevitably draw down the wrath of heaven upon them.

Professor Jackson, of Boston, having analysed fragments of this red stone, which, according to American authors, is unique in the world, found in them the following composition:—

Water	8·4
Silex	48·2
Alumina	28·2
Magnesia	6·0
Peroxide of iron	5·0
Oxide of manganese	0·6
Carbonate of lime	2·6
Loss	1·0
Total	100

Among the Indian traditions concerning the origin of this quarry we shall cite that which is most generally received, and which M. Catlin recorded in his fifty-fourth letter on the ways and customs of the Red Skins: "Many centuries ago there occurred a deluge, which destroyed all the nations of the earth. The tribes of the Red men assembled on the Coteau des Prairies to escape from the inundation; but the waters, continuing to increase, soon covered the entire mass of Indians, and their flesh became changed into red stone." Another tradition, which seems the complement of the first, says: "Once upon a time the Great Spirit called together all the Indian tribes, and having assembled them towards the south of the Coteau des Prairies, seating himself in the middle of them on a perpendicular rock, which is yet to be seen, he took up a bit of the stone on which he was seated, and rolling it in his hands formed it into a big pipe. He then smoked four times above the head of the Red Skins, sending one puff of smoke in the direction of the north, another towards the south, a third towards the west, and the last in the direction of the east. After which the Great Spirit assumed the shape of an eagle, and made the Indians observe that the stone had become red; that it was formed of their flesh; and that they should always use it to make their pipes and calumets, for it belonged to all; and, finally, that in whatever place a particle of it was, there should never occur either strife or combat. Whereupon he disappeared in a cloud that arose from his pipe. The rocks of the Coteau des Prairies gradually melted down, and spread over a surface of several miles. Meanwhile, they became polished and shining. Two large holes suddenly opened in the ground, and two spirits, the guardians of the quarry, entered by these apertures to watch over the place."

Only two miles of the quarry have as yet been explored. It is public property, though situated in the territory belonging to a tribe of the Sioux nation. Nevertheless, of late years the Sioux, instigated by the white men, keep off the other tribes, and try to monopolise the working of the quarry, that they alone may derive profit from the pipes there fabricated. Formerly, whenever the savages went to the Fountain of the Pipes, they became sacred and inviolable even in the eyes of their greatest enemies, and were lodged and fed in every village through which they had to pass. Arrived at the quarry, they fasted and abstained during three days, and offered sacrifices to the spirit of the Fountain of the Pipes before they began their excavations. Owing to the intervention of the Whites, these ancient customs, which were based on religion, will soon disappear before the spirit of traffic and lucre which has been instilled into the Red Skins.

Another geological phenomenon which this place of pilgrimage affords is the assemblage of several enormous cylindrical blocks of gneiss, felspar, mica, granite, and of blue, red, white, and black slate, of which not a single vestige is to be found in the vicinity, or even at a great distance. Were these rocks brought hither by the Indians? It is not probable; for their state of civilisation had never advanced so far as to lead one to suppose that they had machines or other mechanical means capable of moving or transporting such huge masses. Should we, then, attribute the presence of these natural cylinders to the effects of some terrestrial convulsion? Science has not yet pronounced on this subject.

After having explored the Coteau des Prairies, you go to Fort Pierre Chouteau on the Missouri, by crossing the Rivière à Jacques at the Otuhu-Ozu or Taille des Chênes

(oak cutting), and the Coteau of the Missouri in its southern part. The Otuhu-Ozu is an establishment of great renown, situated thirty miles from the head of the Couteau des Prairies, and 112 from Fort Chouteau. The Rivière à Jacques (the Tahan of the Sioux) is of considerable importance in that region. It takes its rise a little beyond 47° N. lat., and falls into the Missouri below the 43rd degree. It is navigable for small canoes for a distance of about 600 miles, and below the Otahu-Ozu flat-bottomed boats and rafts can descend and ascend it easily. Its bed varies in breadth from 100 to 200 yards, and its banks are generally well wooded.

North of the source of the Tahan-Sansan lies the Devil's Lake, encircled by beautiful hills, which command one of the most admirable and extensive views in the New World, and which tower above vast plains that are covered with efflorescences of salt. This lake is above forty-five miles long, and is studded with islands of a most charming appearance, but its waters are only drunk by wild animals. Near the lake flows the Sheyenne, which empties into the Red River of the north. The valley of the Sheyenne is not only of remarkable fertility, but it is also frequented by those animals whose fur is the most valuable of the American continent.

The Coteau of the Missouri is quite a wilderness, for it is almost without water, without roads, and without woods. Its height above the ocean is about 2000 feet. The soil is burnt by the fires which the Indians light annually in spring and autumn; and streams or brooks being very rare there, one suffers greatly from thirst whilst traversing it. The valley of the Upper Missouri, considered in a geological point of view, may be divided into two plateaus (one above the other), which were evidently inundated

during the diluvian period. Both of these plateaus are 240 feet high, one is set above the other, and the first is washed by the waters of the river. They seem to indicate that the retiring of the floods must have taken place at two very distinct epochs, probably separated from each other by great intervals, and that it drew after it the ponderous mass of detritus and diluvian matters which compose the lands bordering on the Lower Mississippi.

The Missouri is navigable for small steam-boats for a distance of at least 3412 miles; but this navigation is impeded by numerous difficulties and dangers, occasioned by the rapidity of the currents, the numerous sandbanks and countless chicots, stumps of dead trees which are drifted along by the river or stopped and stuck in its bed. The rocks that rise above the banks of the Upper Missouri, from the Nebraska to the Council Bluffs, are carboniferous and calcareous, containing many new varieties of fossils of the species *Producta lobata*, *Producta punctata*, *Orthis delthyris*, *Turbinolia fungites*, *&c.**

To the east and west of the river you perceive rows of hills which present the most extraordinary aspect; those, in particular, that are formed of argillaceous and alluvial soil, being more liable to the action of water, rain, and of all atmospheric influences, are cut up, hollowed, and fashioned into a thousand curious shapes. Sometimes they are cones which resemble gigantic hay-ricks heaped one above the other, or placed in compact groups. At times, also, they seem to be limy rocks, indented and craggy, like mountains of floating icebergs; or, again, as antediluvian monuments, half-destroyed by an earthquake. Beside these Cyclopean ruins are red mamelons, varying from 150

* For more ample geological details, see Nicollet.

to 300 feet in height, on some of which are placed natural square masses of basalt from fifteen to eighteen feet high, representing chimneys, druidical stones, and broken obelisks. Vegetation is almost impossible on these cones, owing to the nature of the soil; nevertheless, you may sometimes find there one or several layers of excellent earth, whereon grow various shrubs, and even trees, which form a double or triple crown of verdure, presenting the grandest effect. Above these verdant diadems are enormous congeries of basaltic crystals, or other shining substances, produced by the chemical action to which we have already alluded when we endeavoured to explain the volcanic phenomena of the Smoky Hills. As we have before stated, these crystals adorn the summits of the red mamelons, and glitter in the sun like immense diamonds; which circumstance has caused those hills to receive the appellation of the "Shining Mountains."

From Fort Chouteau, or Fort Pierre, to St. Louis, that is to say, for a distance of upwards of 1300 miles, you continually enjoy the view of this sublime spectacle, as varied as it is wonderful, and to which are frequently added extensive cordons of virgin forests, that are daily narrowed and wasted away by the flowing of the Missouri. But we would require innumerable pages to recount all our reminiscences of a time already so long past. We have only sketched rapidly the results of our information and personal impressions, so as to abridge and facilitate our task; besides, it was very difficult to interest the reader without fatiguing his mind by minutely detailing the peculiarities of so vast a region as that of the deserts of the New World, and the sentiments with which they inspired us.

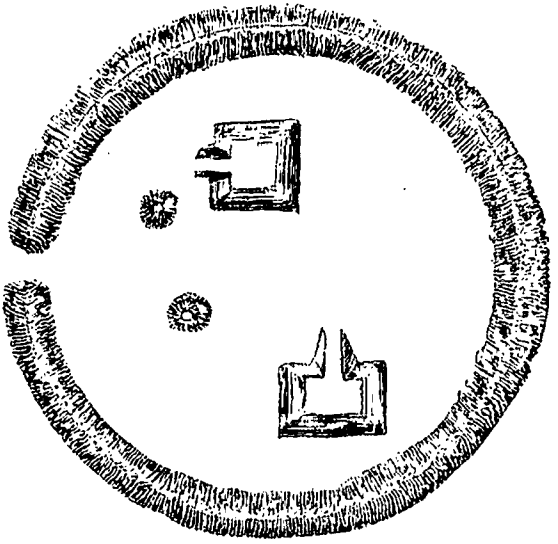
We must confess that it is not without feelings of regret

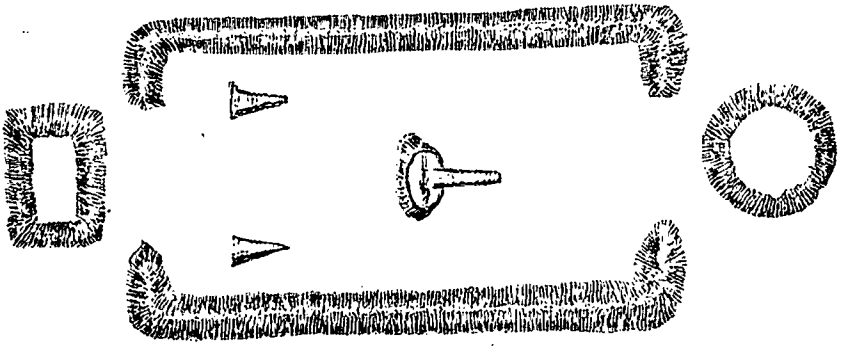
that we have thus yielded up the most cherished, if not the sweetest, portion of our remembrances, those relating to our journeys in the American solitudes, divested of the greater part of their local colours, which were so pleasing to us, but which we were often obliged to omit, not to become diffuse. Thought, like a young and timid virgin, cannot show itself indifferently to every glance: it fears to meet with irony, doubt, or weariness in those to whom it confides itself; it is only with trembling steps that it advances on the field of the unknown; it dares not soar boldly in the celestial spheres of divine inspirations, because its wings are withheld by that bashfulness of soul which admits of no plurality in its intimate effusions.

There are recollections which produce on a soul tried by what is vulgarly called the rigours of fate an effect similar to that of the contact of man on the sensitive plant of the woods; its tiny leaves become folded as soon as they are touched, and never develop or expand their simple beauty; but when forgotten and alone they are free, and only follow the impulse of their nature. Recollections, like all emanations from the heart, have also their sensitive side; they require that liberty which isolation imparts; and the assurance that their melodious voice will not be troubled by a jeering and hostile echo, or by sceptical indifference. It is then that they possess all their power and melancholy charms: it is then that, with them, the memory reverts to bygone days; that it animates the monotonous existence of the invalid missionary, in presenting before him, as in a vapoury and beautiful mirage, the thatched roofs of the huts he visited to relieve a dying man; his faithful steed, with its long flowing mane, sparkling eye, and light foot, on which he dashed over

the boundless plains and burning deserts: he beholds, in thought, those old virgin forests of the New World, with their ancient trees, whose stalwart and bushy branches are bound together and encircled by immense bindweed, which entwines them in its graceful folds.

Often does he fancy he hears the fearful mewing of the panther, mingling with the plaintive cooing of the turtle-dove, with the lively and animated song of the cardinal and blackbird, or with the whisper of the breeze in the palmated date-tree: he becomes intoxicated with the delicious fragrance with which the tropical flowers fill the air: his imagination carries him beyond the seas, and even beyond the present life, to make him live again the life of the past, — the active, useful, and sublime life of the missionary. But, alas! the reality soon arrives, and with its mocking breath dispels all these perfumes and ephemeral illusions; yet they never fail to return at the very first hour of sadness and reverie.





ANCIENT AMPHITHEATRES.

PART IV.

ANTIQUITIES.

CHAP. XVIII.

RUINS IN THE GREAT DESERTS. — POSITION OF AMERICAN ANTIQUITIES. — SOUTHERN ANTIQUITIES. — NORTHERN ANTIQUITIES. — FIGURE OR TOTEMIC MOUNDS. — NUMBER AND DIMENSIONS OF THE TUMULI. — ANCIENT TOMBS. — FUNERAL ALTARS. — SECTION OF THE TUMULI. — ANCIENT URNS. — OSSUARIES. — OBJECTS DISCOVERED IN THE TUMULI. — ARTIFICIAL MOUNDS FOR SACRIFICING. — ENCLOSURE WALLS. — SACRED ENCLOSURES. — TUMULI USED AS TEMPLES. — MOUNDS OF MIXED CHARACTER. — OBSERVATORIES. — SIGNAL TOWERS. — STRATEGICAL MOUNDS.

THE immense deserts we have described afford an interest beyond that of their natural beauties, their variety of landscape, and wild poesy; they offer a wide field for study to the antiquarian and archæologist, whose every footstep amid the grass of the prairie meets with countless ruins, the origin of which disappears in the night of time. Thus, from Florida to Canada, and from the Atlantic to the Pacific Ocean, the American soil is strewn with gigantic ruins of temples, tumuli, entrenched camps, fortifications, towers, villages, circuses, towers of observations, gardens, wells, artificial meadows, and high roads of the most remote antiquity.

These monuments of extinct civilisation are to be found, singly or in groups, throughout nearly the whole surface

of North America, but more particularly in the valleys of the Mississippi and the Ohio, which seem to have been the main road followed by the primeval emigrations that poured people into the interior of this vast continent. Yet tumuli are equally found in Oregon, on the banks of the Gila, of the Colorado, and their tributaries. Generally speaking, American antiquities are only to be seen on the banks or in the neighbourhood of rivers, streams, and lakes; they are rarely found in the interior of the country. The shoals and the alluvial grounds appear to have been the favourite spots chosen by the Indians whereon to raise their gigantic mounds; the principal ones are situated in the most fertile shoals, which are at the time the best adapted for cultivation.

The plan and construction of all these monuments differ according to the place where they were erected, and they are seemingly the work of various peoples. In the vicinity of the Great Lakes, and in the States of Wisconsin, Iowa, Michigan, and Missouri these constructions are made of earth, of conic shape, or in the form of animals, birds, reptiles, and even in that of men. They are like immense bassi-rilievi, carved on the soil by the hand of giants. In the interior of those monuments, relics of arts have been discovered belonging to a very ancient period, and consisting of personal ornaments, domestic utensils, or articles connected with religious worship, made of different metals or of *pietra-dura*.

In the valley of the Ohio, these works are more numerous, of greater size, and more regular in their lines. They seem to differ in their destination from those of the north. Conical and pyramidal hillocks are found there in countless profusion, their summit often being truncated, and sometimes flat like a terrace; many bear a striking

resemblance to the Mexican *Teocallis*, or even to the *Nurraghe* of Sardinia. The tumuli are often surrounded by earth-works or stone walls, and give the best indication, from their number and size, of the mightiness, or at least of the multitude of the populations by which they were raised.

As we advance southwards we find, among the States bordering on the Gulf of Mexico, hillocks still more regular, and of larger size than in any other place. It is only in those States of the American Union that traces of brickwork have been detected in the construction of ancient edifices.

The tumuli are divided into four classes, viz. altars, tombs, temples, and mounds of no determinate character. These classes are in the following proportion: On examining one hundred tumuli, sixty were found to belong to the order of altars or temples, twenty to that of tombs; the rest were places of observation, or hillocks, the nature of which cannot be specified. The number of tumuli is very considerable in North America. Some writers make it amount to 5000. This number appears to us very much underrated; other learned writers asserting that the State of Ohio alone contains more than 10,000. It is, however, certain that they are extremely numerous, and that many have already been destroyed by the clearing of the land, by the deviation of streams, or yet remain hidden in the depths of the woods.

As we have already observed, the antiquities of the south are remarkable for the great regularity of their structure, and their extraordinary size; they have accordingly been looked upon as the work of a different nation and a different epoch. These mounds are composed of several stories, and have some resemblance to the Mexican *Teocallis*, owing to their pyramidal shape,

their dimensions, their spacious terraces, lofty passages, and long avenues. They are found in large numbers all over the country, from Florida to Texas. Smaller hillocks, placed at regular intervals, often surround the larger ones. Some have paths winding round them from the base to the summit; others have gigantic steps, like slopes in European fortifications.

Fences and enclosures are very rarely seen in Florida. Not until you reach South Carolina do they become more frequent, their character being entirely military. We must here establish an important fact, that of the discovery of wooden obelisks in the north of Florida. Unfortunately, owing to the decayed state of those monuments, antiquarians have not been able to derive much information from them; but the mere fact that they exist is, to a man of science, a circumstance of interest. Added to these, there are high roads in this country, usually leading to a pyramidal hill, or to a lake evidently dug out for the use of the population, or conducting to broad tetragonal terraces. From St. John, directing one's progress to the south of the Floridan peninsula, one meets several of these long and wide avenues, bordered with enormous pyramids, and leading from the town to an artificial lake. These pyramids, undoubtedly raised with a view to transmit to posterity the glory and magnificence of a reign or a nation, might also have served the purpose of public edifices for political or religious assemblies.

Another species of antiquities to be found in the southern provinces of the United States are courts or amphitheatres, the object of which appears to have been that of public amusement, as in the amphitheatres of Rome. Prisoners of war were tortured there, in presence of the people seated on the taluses or slopes surrounding

the court. As for the tetragonal terraces, of which we have already spoken, we believe they served as a base or foundation for the fortresses. The pyramidal hills were for the most part observatories, or rather *high places*, such as are mentioned in Scripture, upon which victims of divers kinds were sacrificed. These raised places are always so situated as to command a wide extent of country all round.

It is not known to what people these antiquities ought to be attributed; as previous to the Cherokees, who have occupied the country since the discovery of America by Christopher Columbus, there existed a nation or confederation, governed indeed by the same system of laws and customs, but whose origin is so obscurely remote that their successors are unable to account with any degree of certainty for the destination of the monuments left by their predecessors. It is therefore only with great reserve, and by dint of comparison and study, that it becomes possible to treat the question of Indian archæology earnestly and satisfactorily.

In the north-west part of the United States, the tumuli are of a different character from those of the north and south. We therefore believe them to have been raised by other populations, or at least at a different period, which we are inclined to think posterior to that of the earthworks before mentioned. These earthworks of the north-west are mostly in the form of caymans, serpents, buffaloes, and some other animals; frequently they represent figures of men. These colossal effigies, the particulars of which we will shortly enter upon, are found on undulating meadows, together with artificial conical hillocks, and sometimes with enclosure walls; but beyond a very few instances, these walls offer none of the strategical combinations that are

recognised in the fortifications of Ohio. These singular monuments can more frequently be seen in the southern counties of Wisconsin; some also are seen in the Prairie du Chien, on the Mississippi, to the east of Fond du Lac, near Milwaukie, Lake Winnebago, and Lake Michigan, over an extent of more than 148 miles in length and 60 in breadth. The Indian road, called the Great Path of War, which extends from Lake Michigan to the Mississippi, bending above the Prairie du Chien, divides in two this line of earthworks, the origin and destination of which are shrouded in mystery.

These species of hillocks are smaller than in the rest of the American continent; they are seldom single, but generally in a line, or clustered in groups. Their height is by no means proportionate to their other dimensions, varying between 18 inches and 6 feet. In the county of Dade (State of Wisconsin) is to be seen a row of these mounds, representing a herd of quadrupeds, probably buffaloes, each 35 yards in length. A human figure, 48 yards long, with its legs apart, is distinguishable in another place. Such groups are very common the whole length of the above-mentioned road. Mr. Schoolcraft believes these *figure* mounds to have some affinity to the Indian *totemic* system. The *totem* is the heraldic sign of a clan, each member of which bears on his body or garment a figure of the animal which the tribe has adopted for its coat of arms, and from which it derives its name. The Indians could not better perpetuate the memory of any celebrated individual or tribe than by raising an artificial mound, the outlines of which thus represented a heraldic animal. This otherwise ingenious hypothesis appears to us, however, to be defective; for these figure mounds are mixed with others which are

simply oval or circular, and cannot have formed part of the totems. We therefore conclude that Mr. Schoolcraft's supposition is not applicable to all tumuli of this kind, whether single or in groups. Some authors believe them to be modern, and not to have existed above two hundred years; but this is scarcely more probable, as human bones evidently of great antiquity have been found in them. To avoid entering upon minute and needless particulars, we will confine ourselves to stating these facts.

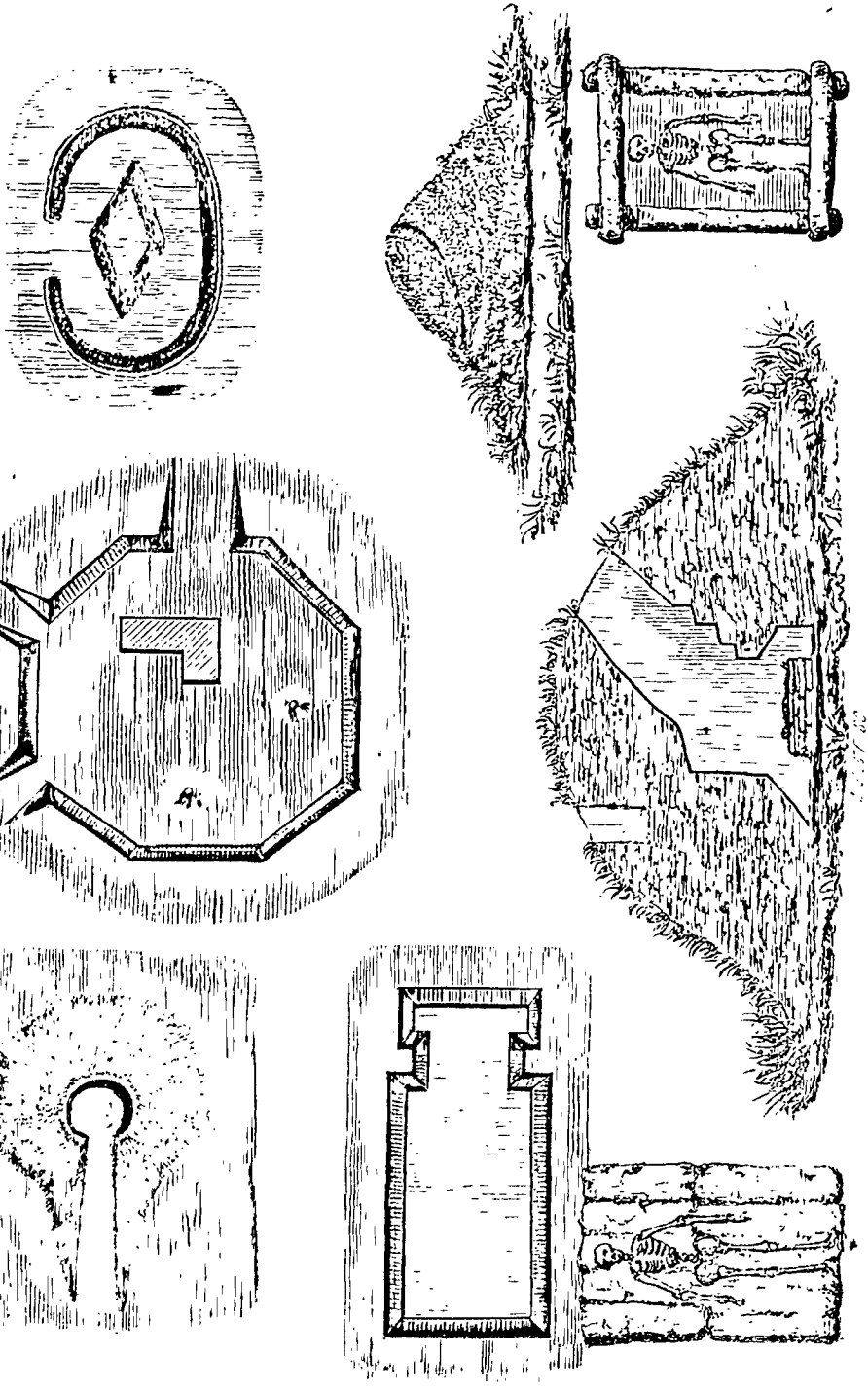
The number of the tumuli that are scattered over the surface of the New World is not to be wondered at. The history of mankind shows us that all the first monuments that were erected consisted but of heaps of stones or earth. It was at a much later period that they were followed by pyramids, obelisks, and arches; yet these primeval monuments, rude as they were, more effectually resisted the action of time than those of a more advanced civilisation. The tumuli, sheltered by forest trees, or simply by a thick coating of grass, defied winds, hurricanes, and revolutions; while the granite and marble of more modern edifices crumbled to dust, and became a heap of shapeless ruins.

America is not the only country where tumuli are found; they are equally met with in India, in Siberia, on the shores of the Black Sea, the Bosphorus and the Mediterranean, in the British Isles, and elsewhere. There are thousands in Oregon; their general dimensions are 6 feet in height by 10 in breadth at the base; they usually contain nothing more than a pavement of round stones. Whether they be elliptic, square, or pyramidal, one point they all have in common is, that they are truncated at the summit. They are mostly made of earth, yet not unfrequently of stone, especially uncemented.

The prevailing material is clay, in consequence of its being more common, and better calculated to resist atmospherical influences. In both Americas there are clay mounds raised upon pebbly or sandy soil, the erection of which must have cost long and painful labour. Sometimes there are heaps of stone in the centre of several clay mounds, but this is not a common case. They also vary from 3 to 19 feet in height. The truncated pyramid of Cahokia (Illinois) is 90 feet in height by 665 in circumference at the base. The great cone of Selserstown (Mississippi) covers an extent of six acres; but the average size is from fifty to sixty feet in height, and from ten to thirty-five yards in width at the base. There are often pits or wells in the neighbourhood of these mounds, from whence the earth of which they were erected was evidently taken. Most of these monuments are massive, some are vaulted; in these cases the vault is made of stone or wood, sometimes of both combined.

As we have already remarked, the American tumuli were not exclusively tombs; some were used as temples or altars, others as extensive ossuaries, and many formed part of the system of native fortifications. Some served all these purposes at once, as was customary among the ancient Grecks and Romans, if we judge by the tomb of the father of Adonis at Paphos, and that of Cleomachus, over both of which temples were built, the first being dedicated to the worship of Venus, the other to Apollo.

In the patriarchal era, or the infancy of society, no monument was so easily erected, and none could more surely preserve the memory of a deceased relative or hero, than these raised earthworks, simply constructed on some high place, and made to enclose the mortal remains



of a being to whom they looked up with love, respect, or veneration. History proves that funeral games and feasts were instituted to commemorate the virtues of the dead, and that sacrifices were periodically offered up in honour of the Supreme God, the Ruler of life. When large families had at length grown into nations, these tombs multiplied and naturally increased in their dimensions. At a later period the Deity was more or less laid aside, and animals were sacrificed to the memory of the dead, instead of being dedicated to God. If this be not strictly correct with regard to all the nations of the earth, it is so at least for the first American nations, as it is strikingly evinced by a careful examination of their tombs.

The mounds used for funeral sacrifices are found for the most part within the walls of entrenched camps and fortified towns. They were all built, not in horizontal strata, but in convex layers. In the southern part of North America these layers are generally horizontal, and separated from each other by a burnt surface, which is supposed to have been a brick pavement. Some are found composed of a layer of soil and one of human bones alternately, from the base to the summit; but some writers assert that these tombs are the work of the Cherokees and other tribes of the present Red Indian race.*

On the top of these tumuli are altars of baked clay, or stone, in the shape of large basins, varying in length from nineteen inches to seventeen yards, but their average dimension is between two and three yards. These altars always stand upon a small basement, about eighteen

* See the notes, and the paper intitled "Observations on the Aboriginal Monuments of the Mississippi Valley," by E. G. Squiers, in the "Transactions of the American Ethnological Society."

or twenty inches thick. A scientific examination of one of these funeral tumuli took place near Chilicothe, in the state of Ohio, if we mistake not, under the direction of Mr. Squiers, a distinguished antiquarian. It resulted as follows :—

The tumulus was found to consist of a succession of layers of an average thickness of about ten inches. These layers were alternately composed of gravel, pebbles, sand, and homogeneous earth with but little mixture, which appeared to have been carried and deposited there in small loads. The basin of the altar was filled with fine ashes and fragments of pottery, shaped and externally ornamented with paintings like those of the Peruvians. This basin also proved to contain a few brass ornaments. The ashes were overlaid with a number of sheets of opaque mica, upon which rested a quantity of half-calcined human bones. Twenty inches below the surface of the tumulus, a little to the left of the centre, was found a human skeleton, falling to dust. Above the skeleton the strata of earth and pebbles had been disarranged, so as to render it probable that the body was buried after the erection of the monument; perhaps at a very posterior date.

The tumuli more exclusively used for the purpose of burying one or several persons, are much larger than those employed only for funeral sacrifices, and their strata consist more of gravel and sand than of earth. A human skeleton is generally found placed at the base, within a sort of frame, made of four pieces of rough timber, and carefully covered with a heap of bark, or small thin boards. Close by the skeleton are generally placed some ornaments and sheets of mica. These tombs are mostly devoid of altar; but traces of sacrifices, probably offered to the shades of the departed, are visible on the top. A very

thin bed of charcoal and ashes would tend to show that the fire of these sacrifices was allowed to burn but a short time. Owing to the compact and dry quality of the materials of these tombs, skeletons have been found within them which must have been buried more than eighteen centuries. All were not in the same position; some had been laid horizontally, others were in a sitting posture, while others had been cast into the grave without any apparent arrangement.

The tombs we have just described are found in very large numbers; their average height is eight or ten yards; they have no walls of enclosure, but are frequently placed in groups. Their usual form is a simple cone; sometimes they are in the shape of a pear, or of an egg. The vault within which the bones of the dead are laid is sometimes built of stones placed above one another without any cement.

The builders of these tombs frequently burned their dead before they buried them. In the southern states funeral urns have often been discovered within tumuli of this kind, as also beds of charcoal, from which circumstance it is inferred that fire held a prominent part in funeral ceremonies at the time of sepulture. In some places the deceased were not burned immediately after death; they waited the decomposition of the body, after which the skeleton was placed in the urn. When the opening was too narrow, the frame of bones was forced into a sitting posture in the urn, over which the skull was placed as a cover. Whole cemeteries have been discovered in which this kind of sepulture had been practised. As still takes place at the present day, they generally buried with their dead the ornaments, arms, and other objects belonging to them during life. Graves of Liliputian dimensions

are found in some ancient cemeteries of several counties of the United States, seeeming to indicate the existence of a race of dwarfs; but an examination of the tombs has proved that this phenomenon results merely from these people's custom of doubling up the bodies before burying them.

The Indians themselves know nothing of the origin of these tombs, or of the men who built them; but they hold the monuments in traditional veneration and superstitious awe; they sometimes bury, or lay on their top, the mortal remains of their great warriors or celebrated chiefs. The discovery of these isolated skeletons, on hillocks peculiarly dedicated to religious ceremonies, has very likely led into error many antiquarians, who must have taken these mortal remains of the present race of Red Indians for the personage in honour of whom the artificial hillock was raised.

Besides the above-mentioned objects, these monuments also contain ornaments of silver, brass, stone, or bone; beads of the same material, but more often made of shells, and mixed with pieces of silex, quartz, garnet, or obsidian, the points of arrows, fossil teeth of caymans or sharks, marine shells, sculptures of human heads, or of different animals, pottery, and several other things, which indicate a certain knowledge of art.

Very valuable discoveries have lately been made in the New Granada confederation near Chiriqui; we refer to the arms, idols, and medals enclosed in tombs belonging to Indian tribes which have disappeared many centuries, and whose enormous wealth is reported by tradition. These works of art are declared by the archæologists of Panama to belong to very remote antiquity, and acknowledged by them to possess the characteristics

of both Chinese and Egyptian art. We record these facts to show that it was a prevailing custom among the Indians to enclose in the graves of their dead their favourite utensils and ornaments, the materials of which differed according to the state of civilisation and the resources of the country.

Sacrificial mounds are generally placed within, or in the immediate vicinity of, sacred enclosures. They are *stratified*, that is to say, built in distinct and visible layers; they contain a symmetrical altar of baked clay or stone, upon which are deposited matters that have been subjected to the action of fire, such as bones of elks, deers, wolves, &c. These altars are not all of the same form; some are round, others elliptic, square, or parallelogrammic. Their average size is two or three yards, but some are as many as five in breadth, and seventeen in length. The strata of these mounds are not horizontal, but convex like those of the tombs; an external coating, from sixteen to eighteen inches thick, serves to protect the form of the tumulus. When these layers are regular and intact, one may be sure that all the contents of the tumulus were deposited in it at the time of its erection; but when they are cut or broken in certain places, it is right to conclude that any relics enclosed within them are of later date. It is important to establish this fact.

The enclosure walls are of two classes, very distinct in their apparent destination. Some are incontestably of a military character, while others were made for some superstitious object in connexion with the religious belief of the constructors. They are square, circular, elliptic, polygonal, regular, or irregular; some are parallelogrammic, The square and round are often combined together, and connected by parallel lines or works. For the present, we

shall only advert to the sacred enclosures. They differ from military works, above all, in their position, which, being commanded by neighbouring heights, would be against every rule of defence; and in their size, very inferior to that of walls fit to guard a town; also in their *fossés* (trenches), which are interior instead of exterior, like the moats of a fortified place; and lastly, in the nature of the tumuli enclosed within these ramparts, or in their vicinity.

The examination of these different works leads us to believe that the system of public and private construction was in a great measure influenced by the religious system of the constructors, as was the case with the Aztecs. The government of these nations appears to have been theocratic or sacerdotal, like that of the Jews; and the religious, administrative, and military power was probably vested in one and the same person. This is clearly evinced by the fact of the *taboo*, or sacred monuments, being combined with those of a purely military character. By means of such an arrangement, these works were under mutual protection, without prejudice to the primitive destination of each.

When enclosures were raised merely with a view to religious purposes, they were generally made of earth and situated on low flats, rarely on high or uneven places. Their form is usually circular, sometimes elliptic or quadrangular, but in all cases regular, the circumference about 300 yards, and they have but one single entrance. Independently of these enclosures, there are a multitude of small circles, about fifty yards in circumference, near which are grouped some of the mounds, which have evidently served as altars. Those small circles are possibly ruins of circular huts, such as the Mandans still build at the present day. The large circles, some of which extend

over a surface of fifty acres, are for the greater part connected with rectangular enclosures by means of broad avenues. The walls are all made of earth taken from the surface of the soil, which is made even and perfectly horizontal.

The religious feelings which actuated the authors of these immense and numerous constructions can alone explain the reason for their erection. If religion were out of the question, it would be difficult to account for the object of works like those of Newark, which extend with their avenues over a space of more than four square miles. Only the great temples of Abury and Stonehenge in England, and Carnac in Brittany, can be compared to them.

When artificial hillocks served for temples, or, at least, were the base of sacred wooden edifices which have now disappeared, they are distinguishable from other monuments of the same kind by their symmetry and superior proportions. They are generally surrounded by walls, but this is not a rule without exception. Their shape is generally a truncated pyramid, with steps or a spiral path leading up to the top. But whether round, oval, octangular, oblong or square, still all these earthworks have a terrace. Some that are only three or six feet high, cover a superficies of several acres.

Tumuli of this kind are not frequently met with in Ohio; they are rare except in the neighbourhood of Chillicothe, at Marietta, Newark, and Portsmouth. They are oftener found in Kentucky than in the north of Ohio, and more commonly in the States of Tenessee and Mississippi than anywhere else. One of the largest hitherto discovered is at Cahokia, in Illinois; in shape it is a parallelogram, 235 yards long by 170 broad, and 90 feet high. There is an enormous terrace on one of its sides, which is reached by

means of a talus with broad steps. At the time when the Trappist monks occupied this place they turned this talus into a kitchen-garden. It is 55 yards in breadth by 120 in length. The summit of the artificial hillock measures 160 yards in length by 70 in breadth, and the volume of this ponderous mass of earth may be calculated at seven millions of cubic yards.

Besides the artificial hillocks above mentioned there are others, the uncertain nature of which has not allowed them to be classed among the preceding; their character appears mixed, and they seem to have a manifold destination. Some have the pyramidal form of the Mexican Teocallis, and a quadrangular or oblong base, with sharp corners and taluses, or gentle slopes, ascending from the ground to the summit. Were these hillocks tombs, temples, observatories, or small forts? These questions admit of various opinions. We believe they served a double purpose. One of the most singular ever examined is situated on the eastern bank of the Scioto (state of Ohio); it is irregularly oval like an egg, 50 yards in length, 30 in breadth, nearly 21 feet in height, and surrounded by a thick wall. Two excavations which were made in this tumulus led to the discovery of two wooden frame-works, supported by stakes planted in the soil at the time when the tumulus was erected. Above each of the frame-works was found a skeleton partly consumed, pieces of brass pierced with holes, and a porphyry pipe admirably sculptured. A clay altar was also discovered, with a heap of burnt leaves and deer's bones lying upon it. The surface of the mound is covered over with a layer of gravel; around the base is a wall made of flat stones, probably intended to support the earth and maintain it in its actual form.

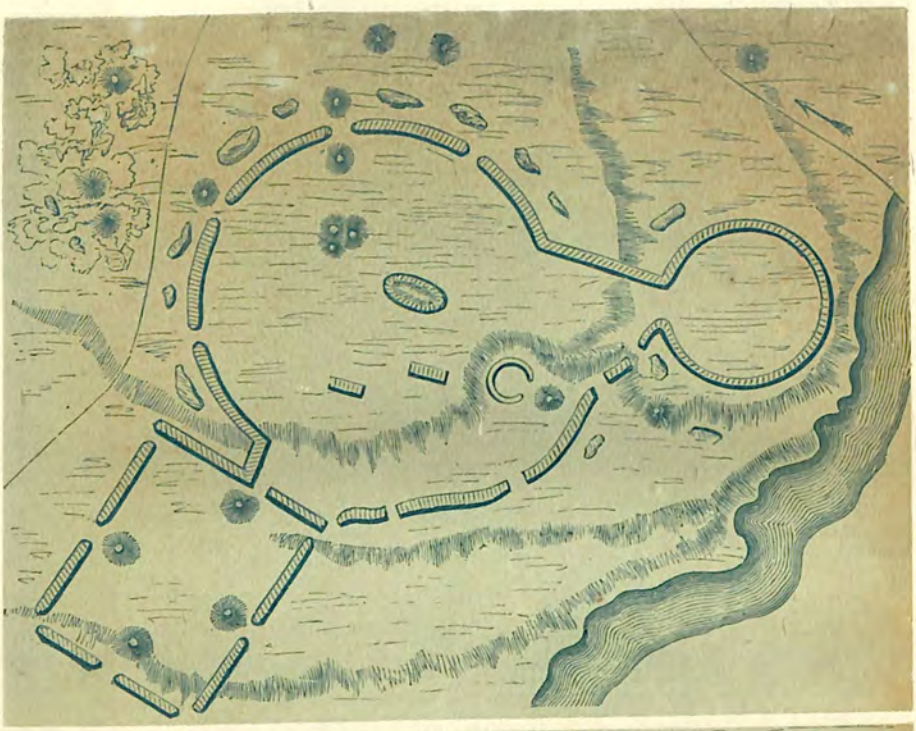
At the summit of hills or table-lands, and in open spaces, are also seen a very large number of artificially raised earthworks, commanding a vast extent of country, and which, like the Celtic *cairns*, were probably used as places of observation and signal-towers. The principal heights along the valleys of the west are commonly crowned with these mounds of middling size. In certain valleys one may see long chains of this kind of observatories, placed at short distances from each other, on the tops of hills and mountains. Fires lighted on these elevations can be seen at fifteen or sixteen miles all round. In the State of Ohio some are so placed as to permit of corresponding rapidly between two points forty or fifty miles distant from each other. Between Columbus and Chilicothe, on the eastern bank of the Scioto, there are more than twenty so arranged that a signal might be transmitted in a few minutes along the whole line.

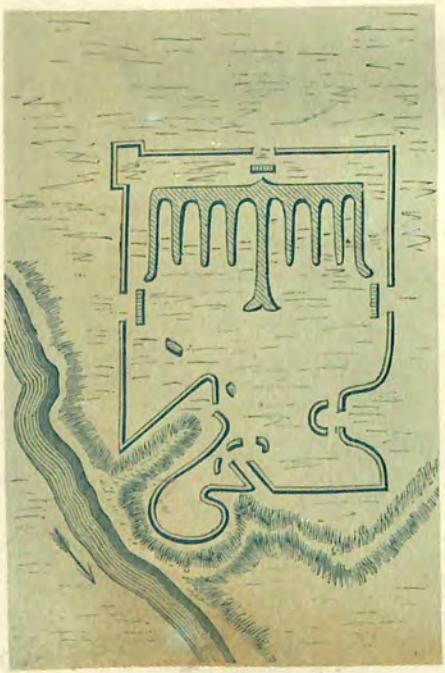
These communications were made by means of large fires, of which the smoke was visible by day and the flame by night. On all hillocks raised by the hand of man there are traces of fires that had been lighted upon a heap of stones, some of which are calcined or even vitrified. This old custom, which prevails among all mountaineers, of communicating by means of fire signals, is still in full vigour among the Indians of several tribes of the Rocky Mountains and of their western side. Colonel Fremont, in his account of his second expedition into Upper California, relates that he often saw columns of flame and smoke rising from the heights, lighted by the Red Indians, who, alarmed or anxious at his presence, thus warned each other of his movements.

There is no essential feature to distinguish the tumuli which formed part of the system of defence in entrenched

camps and fortified towns, from those we have already mentioned. They were generally placed in the interior and opposite the openings or entrances left in the thickness of the wall.

Lockiel, in his "History of the Mission of the United Brethren among the Indians," assures us, we know not upon what foundation, that these tumuli were hollow, and had an opening at the top resembling that of a well, through which the natives used to let down their wives and children at the first approach of an enemy. The men then obstinately fought for the ground. They carried a prodigious quantity of stones and stumps of trees to the tops of these tumuli, whence they hurled them down upon the assailants. We greatly doubt the correctness of these indications, for all these cones or earthen mounds situated near the entrance of fortifications are solid and not hollow; nor are their dimensions sufficient to allow of a large quantity of projectiles being collected on their top. They were therefore placed there only as strategical obstacles, which the enemy had to encounter on trying to force an entrance into the fortifications.





ANCIENT FORTIFICATIONS.

CHAP. XIX.

ANCIENT FORTIFICATIONS. — THEIR POSITION. — NATURE OF THE ANCIENT FORTRESSES. — RUINS ON THE LICKING. — FORTIFICATIONS OF MARIETTA AND CIRCLEVILLE. — RUINS OF ENTRENCHED CAMPS. — RUINS IN THE FORESTS. — ANCIENT CIRCUS. — PUEBLOS OF NEW MEXICO. — PUEBLO PINTADO. — RUINS ON THE RIO VERDE. — POTTERY OF THE PUEBLOS. — RUINS IN THE APACHES' TERRITORY. — AZTEC RUINS NEAR THE GILA WALLS AND WELLS OF THE GILA. — A LEGEND. — ESTUFAS OF THE PUEBLOS. — TRADITION CONCERNING THE PUEBLOS. — REMARKS ON THE ANCIENT TRIBES AND DESERTS OF THE SOUTH-WEST.

In order to understand fully the character and strength of the fortifications belonging to the ancient people of North America, it is necessary to form an idea of the country in which they are to be found in greatest number. We have already, in our first descriptive chapter, exhibited the valley of the Mississippi in a geological point of view; it remains to be added that this valley, from the Alleghanies to the Rocky Mountains, forms an immense basin, owing its general aspect to the powerful action of the waters. The rivers have ploughed their beds deeply across a vast plain, and left as traces of their working broad table-lands which mark the eras in their history. The borders of these table-lands are cut up by a number of ravines, between which rise lofty hills with flat tops, and sometimes so joined together as to form a kind of buttress. The sides of these heights are generally very steep; access to them is most difficult, if not impossible. It is likely that the natural strength of these positions, so

easy of defence, suggested the idea of using them as citadels, most valuable to a people with enemies in the surrounding country, and liable to be often disturbed by hostile invasions. Military constructions to protect the development of young colonies were placed upon these heights, skirting the whole of their outline. They were accessible on one side only, and carefully defended by a series of walls and raised earthworks, serving perhaps as towers for the sentinels. It is therefore not surprising to find these places occupied by strong and complicated works, the nature and proportion of which were prompted by the sinuosities of the ground. Constructions of the same sort are also met with on peninsulas formed by two rivers. In this case, a trench or a wall, single or double, extends across the peninsula, and defends its ingress by land. The two other sides are naturally protected by the banks of the two rivers. It is observable, in all instances, that a careful choice was made of every position, and that they were fortified so as to afford security to the inhabitants.

Of all the great works left by the ancient American nations, none are more extraordinary, or more worthy of study, than those colossal fortifications and vast entrenched camps, protecting and surrounding spaces so very considerable that of necessity they can only have been the work of a large population. The epoch at which these fortifications were built is totally unknown, but they must have been coeval with the tumuli, for not only are the latter generally placed in the vicinity or within the fort, but they often form part of the plan of defence.

It is in the valley of the Ohio and in New Mexico that these gigantic traces of human industry are most frequently met with, but with this difference between them, that the

authors of the Ohio monuments are unknown, whereas those of New Mexico appear to be attributable to the ancestors of the present tribes. We will briefly describe those among the Indian antiquities which are most important from their singularity and extent.

In the county of Licking (Ohio), between the delta formed by the Newark and the Racoon, there is a perpendicular table-land about thirty-five feet high, upon which regular fortifications of great extent are built. On the west side of the platform is an octagonal fort, enclosing a space of about forty acres, with walls about nine feet in height, and of equal breadth. This fort was entered by eight gates about five yards in width, each protected by a tumulus placed in the interior in front of the entrance. Two parallel walls lead to another circular fort, placed south-west of the first, covering a space of twenty-two acres. Proceeding towards the south, you see an observatory that commands almost all the extent upon which these divers constructions are erected. Beneath the observatory a secret passage leads to the bank of the Racoon. More to the right is a third fort, also circular, of about twenty-six acres, with an interior moat, out of which the earth was taken to form the walls of the fort, which are about twenty-five or thirty feet high. Two other parallel walls, very distant from each other at this place, run to the north, gradually diminishing their distance, and terminate at another fort, of quadrangular shape, twenty acres in extent. These four different forts are connected by rather low walls, and in the centre is a shallow pond, covering a superficies of 150 or 200 acres, which probably afforded water to the flocks collected within the wide enclosure. Towers of observation are placed from distance to distance on the rising points of the plateau.

The openings in the walls, giving entrance to the entrenched camps, have a striking analogy to those of similar constructions in Mexico. We accordingly read, in the second letter of Fernando Cortez to the Emperor Charles V., a description of military fortifications entirely like those of the valley of the Mississippi. When he inquired at Tlascalla concerning the object and origin of these military works, the Indians told him that the people on the confines were the enemies of Montezuma, and were always at war with him, and that they built these walls to guard against his attacks.

Mr. Atwater, in his "Archæologia Americana," supposes the authors of these fortifications to have been very numerous; but he thinks they sojourned but a short time in the country, from the fact that many of these works remained in an unfinished state. He also adds, that these natives communicated with those who dwelt on the banks of the Horthotking, thirty miles further on, by means of walled roads extending from one settlement to the other. But it is very remarkable that nowhere have any traces of dwellings ever been found. It is likely, therefore, that these people lived in tents pitched within their fortifications, or else in huts made of wood or branches.

There are also some very extraordinary ruins at Marietta, near the mouth of the Muskingum. They are, like those above described, situated on a horizontal height, and composed principally of two square forts, the largest of which covers an extent of forty acres. Their walls consist of earth, and are from three to six feet high, by eight yards in width, or sometimes even twelve yards at the base. Sixteen openings are placed at regular distances on each side and at the four corners. In the centre of the side facing the Muskingum is a covered way, formed by

two parallel walls, built at a distance of seventy-five yards from each other, both about twenty-one feet high by fourteen yards in breadth at the base and 120 in length. This gigantic road runs down a gentle slope from the top of the table-land to the river. In the interior of the fort there still remain three narrow earthen buildings, about thirty-six yards in length by nine feet in height. The object of such constructions is unknown. More to the south-east, and close to the Ohio, is situated the other fort, of about twenty acres, with eight gates, each defended by a small tumulus. Still more to the south rises a large conical tumulus, thirty-eight yards in diameter by thirty feet in height. A broad and deep trench surrounds this tumulus; it is defended by a parapet, through which a wide road leads into the tumulus.

At Circleville, twenty-six miles south of Columbus, in the State of Ohio, is situated one of the most curious and regular fortifications of this valley, where so many singular ones are to be found. It consists of two forts supporting each other. The first is a perfect circle, the second a regular square of 300 yards on each side. The first is formed of two walls with a deep trench between, the second has but one wall and no trench. The inner wall of the circular fort is simply built of earth, and is very high; the outer one is made of alternate layers of gravel and alluvium taken from the trench. The square fort had eight entrances placed at equal distances and defended by tumuli, as is the case in all constructions of the kind. It was necessary to traverse this fort to enter the second circular enclosure, in the middle of which was a large tumulus, rendered very remarkable owing to a sort of mosaic pavement upon which it was partly built.

On the banks of the Little Miami and its tributary streams, and also in the state of Ohio, there are some fortifications composed of six and nine parallel walls disposed like a gridiron; others in the county of Perry are in the shape of a heart somewhat elongated. At Paint Creek, fifteen miles west of Chillicothe, there are a series of fortifications containing elliptic two-storied works, like those in the valley of the Mississippi, and especially towards Mexico. But the most interesting of these antiquities are situated on a hill of 130 acres in extent, and at least 300 feet in height. This hill is so steep, that its summit can only be reached on one side; and on the edges, following all the sinuosities of the soil, was built a wall, in rough stone, one yard and a half thick by thirty feet high. In the direction of the north, that is to say, at the place where the hill descends by a gentle and easy slope to the plain, inside the walls, there are a series of furnaces and traces of forges, the soil to a depth of several feet being covered with coal dross. Two natural or artificial roads run from these fortifications, one to Paint Creek, the other to a small stream that flows at the bottom of a ravine. No engineer could have selected a more favourable site for building a stronghold.

Near the Red Pipe-stone Quarry, on the Coteau des Prairies, there are two entrenched camps formed by circular walls, about 700 yards in circumference, sufficiently high to afford protection to those who sought shelter behind them. The principal entrance to each of these camps is indicated by the site of ruined huts which appear to have been the dwellings of the chiefs; for they commonly chose the most perilous position, and the one by which the enemy must pass should he endeavour to enter the camp. These works being so simple, it is probable

they were only erected for the time being, during a parley with hostile tribes.

Some travellers assert that they have recently discovered among the forests of the Mississippi valley ruins of brick and stone-built towns. These discoveries, however, are denied by writers of the United States, who treat them as fables. Not having seen these ruins, we forbear to speak of them; still we are inclined to think that these travellers may have been misled by the appearance of more or less considerable remains of Mandan villages, such as are scattered on the banks of the Mississippi between the mouth of the Ohio and that of the Yellow Stone River. Besides, it must be remembered that, when the extensive country called New France belonged to us, the French governors of Canada often caused new forts to be raised in order to insure their conquests. At a later period these forts, being abandoned, fell to ruin, and became overgrown with grass, shrubs, and briars, which imparted to them a false semblance of antiquity. Many travellers have thus been deceived, and have wrongly imagined their origin to be anterior to the French rule.

It would be too long a task to describe all the old constructions dispersed in such abundance throughout the American continent, and the works of art they contained, which were nearly similar to those of the tumuli. We will, therefore, merely mention the immense parallel walls terminating circularly, which probably mark the limits of the circuses where the Indians celebrated games and races like those of the Greeks and Romans; the ruins are surrounded with too much uncertainty; but we will enter into some details regarding another kind of monument, belonging probably to a less remote period

than the gigantic tumuli above described, but which, being unique of their kind, afford greater matter for curiosity, and show their authors to have been more intelligent and in a more advanced state of civilisation.

These monuments, called pueblos*, are dispersed throughout the country which extends from the banks of the Rio Grande in New Mexico to the Gila, the Colorado, and the Vermilion Sea which divides California from Mexico. All these towns are so ancient that no Indian tradition of the present races makes any mention of them. It is doubtful whether their origin should be attributed to the Aztecs, as some travellers suppose, for they do not reveal so advanced a state of civilisation as that attained by the Aztecs of Anahuac. The remains of the unknown past show no signs of the mechanical and architectural science which is manifest in the construction of the temple of Xochicalco, in the palaces of Tezcotzinco, and in the colossal stone calendar of Mexico. It is more likely that these pueblos were built by the Toltecs before the invasion of their land, or by the Pimas, or other tribes of New Mexico, about the twelfth or thirteenth century. In all these ruins fragments of pottery are found which still retain a very perfect varnish; they are ornamented with brilliant paintings, lines, scallops, frogs, butterflies, tortoises, and monkeys' heads. The vases discovered in the pueblos are generally shaped like an urn; some resemble those discovered in the United States. These remains of ancient towns are extremely numerous in the country of the Zuñis, Navajos, and Jemez. There is a pueblo at Taos composed of two edifices separated by a river, and connected by a bridge which reached from one edifice to the other.

* The name of Indian towns in New Mexico.

The most remarkable are the Pueblos Pintado and Wejegi, in the narrow pass of Chaco, situated between 35° 56′ 27″ north lat. and 107° 46′ west long. These constructions resemble an immense double ladder, each step of which forms a story. They have no analogy with the edifices of Yucatan and Central America. The Pueblo Pintado is built of small flat slabs of grey fine-grained sandstone, a material never used in any of the modern monuments of New Mexico. The wall-stones are only two inches and a half thick, sometimes less, and the way in which they are built is indicative of much art and ingenuity. The smaller details of these monuments are very remarkable; at a distance they have the appearance of splendid mosaic work. The walls show no trace of cement, the intervals between each layer being neatly filled up with small coloured pebbles, incrusted in mortar made without lime.

The Pueblo Pintado has three stories, its whole elevation being about thirty feet high. Each story forms a terrace and a step to the story above, which is attained by means of wooden ladders resting against the wall. The thickness of the outer wall is one yard at the base, diminishing at each successive story, so that the top wall is but little more than one foot thick. The length of the edifice is 130 yards. There are fifty-three rooms on the ground floor, some being only five feet wide on each side; others twelve by six. All these rooms communicate by means of very small doors, some of which are only thirty-three inches high by equal width. The floors are made of rough beams seven and a half inches in diameter, over which are transversely laid cross-beams of less size; above these is a layer of bark and brushwood, covered over with mortar. These beams show no

mark of having been wrought by axe or saw; they rather appear to have been cut or broken off with some rough instrument more blunt than sharp. The ground floor of this pueblo has no windows; those belonging to the other stories are of the same dimensions as the doors.

The banks of the Rio Verde abound in ruins of stone dwellings and fortifications, which would appear to have belonged to a more civilised people than the Indians of New Mexico. They are found in the most fertile valleys, where traces of former cultivation, and of small canals for artificial irrigation, are yet visible. The solidly built walls are twenty or thirty yards long by thirty or forty-five feet high. The houses were two-storied, with small openings for doors, windows, and loop-holes for defence against attacks from the outside. The style of these constructions recalls that of Chichilticale, or the Maison Rouge (Red House) of the Pimas. We agree with several American authors in presuming that this country was depopulated, in consequence of changes taking place in the configuration of the soil. Moist and fertile valleys have become barren solitudes, and thus forced their inhabitants to emigrate to other regions. The nature and appearance of the soil, the Indian tradition which reports that all the elevated table-lands were once covered with magnificent and fruitful vegetation, and finally the recent desertion of some of the pueblos, are so many indications proving that the countries watered by the Gila, the Colorado, and their tributary streams, were once thickly peopled.

Excavations among these majestic ruins have yielded abundant fragments of beautiful pottery, red, yellow or black, striped, scolloped, and ornamented with brilliantly coloured paintings.

The ruins of the Wejegi present the same character as

those of which we have already made mention. They are 230 yards in length, and there are ninety-nine rooms on the ground floor. The Pueblo Una Vida, situated in the defile of Chaco, is ninety-eight yards longer than that of Wejegi. The Pueblo Bonito is more extensive still. The ruins of the Pueblo Chettro Kettle measure 433 yards in length, and have four stories. The doors and windows are larger than those of other monuments of the kind, and the floor beams are of pine and cedar wood. The number of the rooms is 124 on each story. One of these rooms is in a state of perfect preservation. It is four yards twenty inches long, by two yards and a half broad, and ten feet high. The walls are stone covered over with plaster. In the wall to the south there is a niche, the position and dimensions of which make it appear probable that it was used as a fire-place for cooking; three other niches of smaller size are hollowed in the wall, and were probably intended to contain household utensils. There were two large cross-beams in the ceiling, fixed together by means of ligneous cords, and from these beams hung ropes which but little differed from ours. The Indians maintain that these edifices were erected by Montezuma and his people, at the time of their emigrating from the north to the south, and shortly before their dispersion on the banks of the Rio Grande and in other parts of Mexico.

On the banks of the Gila are seen ponderous ruins, called Casas Grandes, a description of which exists in the works of M. de Humboldt, and in the collection of M. Ternaux Compans, but many others have never been described. Those near the cañon of the Gila, towards the mountains of San Pedro, form a series of houses, the foundations of which are still quite visible, consisting of

round stones; as to the walls, built of *adoubes*, a great part of them has long since disappeared. The houses much resemble the pueblos of New Mexico. In one of them were cedar beams, certainly very ancient; for in these regions, where the atmosphere is so dry, the timber acquires hardness as it becomes older, and in the end almost equals stone in solidity. These ruins abound in fragments of painted pottery and black crystal, which were probably fashioned for points of arrows.

Near the Gila, on the banks of the Blue River, the Black River, and the St. Charles, upon alluvial soil which reposes on basaltic rocks, the remains of ancient Indian colonies are very numerous. Rows and piles of round stones show the plan of the houses, though nearly choked up with rank grass. The rooms, larger than those in the ruins near the mountains of San Pedro, are between four and six yards in width. Some of these rooms appear to have been round. A little further on is a ruined circular stone wall, about 250 yards in circumference, with an entrance on the eastern side, and containing in its centre the ruins of a house, in which no traces of wood appear. Three quarters of a mile more to the west the soil is strewn with enormous remnants of spacious edifices, which contained rooms fifteen yards wide. Most of these houses have cedar beams crumbling to dust, and lying on the ground in the midst of fragments of painted pottery. Some houses are surrounded by a rampart 300 yards in length. Subterranean fires appear to have ruined all this country, and rendered it universally barren; the country might also have been deserted in consequence of volcanic convulsions spreading death and misery among the inhabitants. The whole of the road, which the Apaches have made to enable them to descend into the plain and steal flocks, is strewn with

beautiful pottery; but the houses, which were most likely built of *adoubes*, have completely disappeared.

Not far from the Rio Grande, on the territory belonging to the Apaches, and near the sources of the Gila, is the copper-mine region, which was formerly worked by the Indians. To the east of the ruins rise lofty rocks of a greyish blue, looking like irregular columns; still more to the east are white rocks traversed by veins of copper, so richly mixed with gold that the ore was transferred to Mexico to separate the gold from the copper. The ruins of this establishment consist of clay houses and heaps of coal and ashes. The fort erected for the defence of the mines had the shape of an equilateral triangle, with a tower at each corner. The walls are four feet thick, and are in tolerable preservation.

The country inhabited by the Coco-mari-copas, towards the Salt River and the Gila, seems once to have been very populous, to judge from the remains of walls, houses, and pottery, which the traveller meets at every step. In this place lie the Aztec ruins called Casa de Montezuma, which possibly may be nothing else than the often-mentioned Casas Grandes. We shall describe them briefly. They consist of remains of the walls of four buildings, and heaps of rubbish indicating the places of other edifices. The largest house appears to have had four stories; the floors and ceilings have long since crumbled away, but in the walls there still subsist pieces of round cedar beams, more than a yard thick. Four entrances, answering to the four cardinal points, led into the interior of the house; the doors are extremely small; they are not more than forty-nine inches in height, by twenty-seven in width. The walls are four feet thick at the base, and gradually diminish as they rise to the top; they are made

of a kind of concrete, composed of pebbles and white earth, polished and whitened over. In some rooms, the only thing answering to a door or window was a narrow aperture fourteen inches square.

Two hundred yards beyond this house there is a tumulus surrounded by an earthen wall 100 yards in circumference. Still further on is a terrace of 100 yards by 70, supporting a pyramid of 30 feet in height by 25 square yards at the summit. The whole of the plain extending north, east, and west of the left bank of the Gila, and formerly washed by its waters, is discoverable from the top of this pyramid. The Pimas pretend that these constructions were erected by the son of the most beautiful woman that ever existed, and who formerly lived in the neighbouring mountains. Her extreme beauty caused her to be wooed by a multitude of suitors, but she refused to marry. When they visited her they paid her a tribute; and by means of this resource she provided for the people during times of famine without provisions ever falling short. At length one day she fell asleep, and from a dewdrop descending upon her bosom she became pregnant, and gave birth to a son, who built these houses and many others more to the north and south-west.

Near the Salt River, the remains, and especially the ruins of houses, are even more considerable than those we have described, but they present nothing remarkable or worthy particular mention. Tumuli, truncated pyramids, and filled-up wells surrounded by enclosure walls, are frequently met with in those latitudes. All these monuments contain red or painted pottery, and perforated shells, which were used as coins or ornaments.

All these pueblos of New Mexico contain small circular

structures, called Estufas, often placed within the building itself, or else only at a few yards' distance, once used as places of meeting for political or religious assemblies.

These estufas are, properly speaking, round or square store-rooms, usually situated beneath the soil like cellars; they are sometimes of large dimensions. The ceiling is supported by enormous pillars of masonry, or made of stout pine-trees. The interior is heated by means of aromatic plants, which are kept continually burning. When a question of public interest has to be discussed, the cacique, who governs a pueblo, calls the different chiefs together in the estufa, where secret debate is held over the affair. Sometimes the warriors assemble there after an expedition, and rejoice together for a day or two before they meet their families. These edifices are generally devoid of door or window, and the only ingress to them is from an aperture at the top. The estufa of the Jemez were rectangular, and one story only, being about 8 yards 12 inches wide, by 30 feet high. The interior walls of those edifices are always covered with hieroglyphic paintings and various ornaments. There are pueblos which possess no less than four, and even six, estufas of different sizes. Among the ruins of Hungo-Pavie, near the beautiful plateau of the Mesa-fachada, one of these edifices is found which had at least four stories, buttresses in the interior, and walls a yard thick by 30 feet in height. But to judge from the quantity of rubbish around them, they must once have been much higher. The estufas in the Pueblo-Bonito are 60 yards in circumference, and their walls are regularly formed of layers of small stones alternating with layers of larger ones. Between the Great and Little Colorado there is a chain of arenaceous hills, upon the summit of which are immense ruins of pueblos

and estufas every way similar to those we have described.

The Indians of New Mexico also call these edifices Montezuma's Churches. They still assemble in spring in those which have resisted the action of time and weather, and pray to this demigod king that he will send them rain. According to a tradition still extant among this people, Montezuma often rested in his travels, built a house in an hour, planted maize during the night, and found it ripe and fit to be eaten the following morning. The Navajos believe that all Indians once formed a single nation, and lived a hundred miles north of the ruins of Chaco, upon a silver mountain. By degrees numerous detached tribes descended from the mountain, and built towns and villages in all directions as far as the Rio Grande and its tributary streams. The Navajos alone remained in the country, well satisfied to live in huts made of branches.

These vast monuments of New Mexico are not known to many travellers, and consequently few writers have speculated about their origin. M. de Humboldt fixes the residence of the Aztecs in these latitudes in the twelfth century. We know not from what data this savant formed his opinion, nor whether the Aztecs were indeed the constructors of those edifices. Certain it is, that all the pueblos of this wilderness are of an incontestable homogeneous character; they are the work of a great people, of an intelligent nation, whose civilisation was far superior to that of the actual tribes. But the question is, what became of the population that once filled the land, and have left it covered with such numerous and singular constructions? Careful investigation into all that regards the Red Indians prevents our admitting the idea that the predecessors of

the actual race should have vanished suddenly. We rather believe in a more or less rapid political and moral decline, in a fusion of the primitive races with those that succeeded them, and we shall point out a fact which will throw some degree of light on the supposed disappearance of the authors and inhabitants of those cities that are now falling into decay, and of which we have already spoken. The fact to which we allude is a series of geological and natural phenomena which frequently occur in the immense solitudes that commence in Texas and finish in Upper California, after having traversed the entire of New Mexico.

It is known that all agglomerations of men or families, on settling in a new land, always build their dwellings in wooded parts near streams, in order easily to insure this indispensable element. Many of those populations were suddenly deprived of both wood and water. Perpetual droughts followed the clearing of the woods, compelling the inhabitants of high plateaus to emigrate into the plains. When rain failed, the wells and cisterns dried up, and the horrors of thirst drove the people from their abodes. Both rivers and their sources dried up. We know a multitude of rivers in Texas and New Mexico which have ceased to flow, some for centuries, others only within a few years; and their banks, formerly gay with verdure, plants, flowers, and trees, now disappear under heaps of sand, and present everywhere a scene of desolation. The springs and rivers of the plains always flow over a pebbly or sandy bed, never over a muddy one. The waters are capricious and often intermitting, appearing and disappearing from the soil, to appear and lose themselves again. Many alter their course or cease to flow, while others suddenly rise in the midst of a dry and desert land. On the other hand, the

soil of these regions is often covered with agate, jasper, chalcedony, petrified trees, and masses of arenaceous lava, which, descending from the hills, absorb the water of creeks and sources, fill up the beds of streams, and render lands barren and dry which were at one time watered and fertile. When these phenomena take place, the tribes that dwell in the country are naturally compelled to flee from these newly made deserts, which become the abode of sickness, famine, and death, and they go to seek a more favoured land. These compulsory emigrations must have been frequent, to judge from the traces the populations have left behind; but, of course, the ranks of the emigrants must have been fearfully thinned by hardships and misery: this is testified by the actual emigrations of the Indians of the United States, which, although performed under more favourable conditions, yet are one cause of the dreadful mortality and destruction of the race. If to all those natural causes of dissolution are added intestine war, the difficulty of forming new establishments, the decline of Montezuma's dominion, and its complete annihilation under the Spanish sway, it will not appear necessary to invent a different nation to account for the works of art and civilisation of which the remains cover the vast solitudes of America, merely because their successors have less genius, energy, or enterprise. The Jemez, Zuñis, and several other Indian tribes still dwell in pueblos like those we have described, and it is most probably to their ancestors, and to those of nearly all the tribes of New Mexico, that the construction of those gigantic edifices ought to be attributed.

CHAP. XX.

ANCIENT WALLS. — HIGH ROADS. — TEOCALLIS OF FLORIDA. — GARDENS. — WORKING OF SALT MINES. — WORKS OF ART AND OTHER DISCOVERIES IN THE TUMULI AND ON THE AMERICAN CONTINENT. — SKELETONS. — ORNAMENTS. — SHELLS. — STONES. — PIPES. — SCULPTURES. — TERRA-COTTA. — STATUETTES. — MUMMIES: THEIR DESCRIPTION. — AGE OF THE AMERICAN ANTIQUITIES. — TREES ON THE TUMULI. — ORIGIN OF THE AMERICAN ANTIQUITIES. — OPINIONS OF DIFFERENT AUTHORS. — CONCLUSION.

NORTH AMERICA is rich in monuments of all kinds, dating from a period anterior to the historical era, and among which we have yet to mention wells, roads, gardens, artificial meadows, and fortified towns.

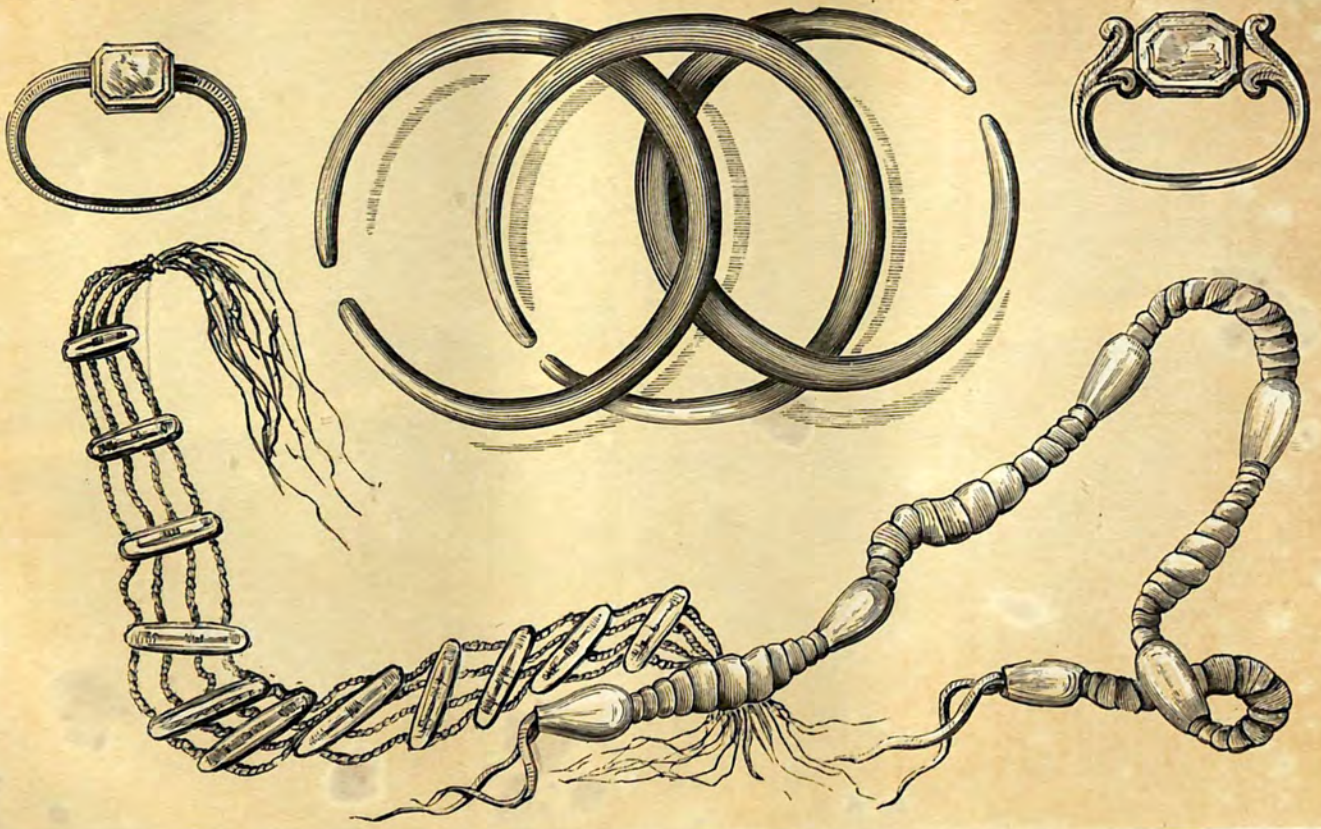
In the State of Ohio alone the wells may be counted by thousands; they vary in depth from eighteen to thirty feet, and in width from three to five feet. Some of them contained rock-crystal, agates, and silex, for the points of arrows and lances, lead, iron, brass, and sulphur. Many writers believe these wells to have served as dwellings; others think they were excavated for the purpose of procuring water, or of extracting from them objects of utility or ornament; others, again, are of opinion that they merely served to supply earth for the construction of the tumuli. This last opinion appears to us indefensible, for the wells are not often found near the artificial hillocks, and it would, moreover, have been much easier to take the earth necessary for raising the latter from the surface of

the soil, than to dig it out of pits. The first two suppositions, though more probable, are still open to numerous objections; and notwithstanding the very minute investigations of archæologists, the greatest obscurity still prevails as to the destination of these wells.

In New Mexico, as in Ireland, Scotland, and many other countries of the Old World, holy wells are found. One of the most important we are acquainted with is that of the Zuñis. It is situated near a solitary plateau on one of the branches of the river Zuñi, between the town of that name and the ruins on the banks of the Ojo Pescado. It is seven or eight yards in circumference, and is surrounded by a very low circular wall. Every year the water is withdrawn from the well, when the Indians come to make their offering to the spirit of the spring. This offering consists of varnished jars, which are placed on the wall, all round which they may be seen in very large numbers, some being of great antiquity; for, according to a tradition in the country, any one attempting to steal one would be punished by instantaneous destruction; time alone throws them down and breaks them.

In Florida, more especially, we find frequent vestiges of extensive roads, from sixty to seventy-five miles in length, the construction of which has been incorrectly attributed by some authors to the Spaniards of the sixteenth century, who penetrated into the interior of America under the leadership of Ferdinand de Soto. When we reflect on the short time Ferdinand de Soto passed in these regions, it is impossible seriously to attribute to him such important works.

These roads led to the great centres of population of which traces are still to be seen, and where the kings,



ANCIENT ORNAMENTS.

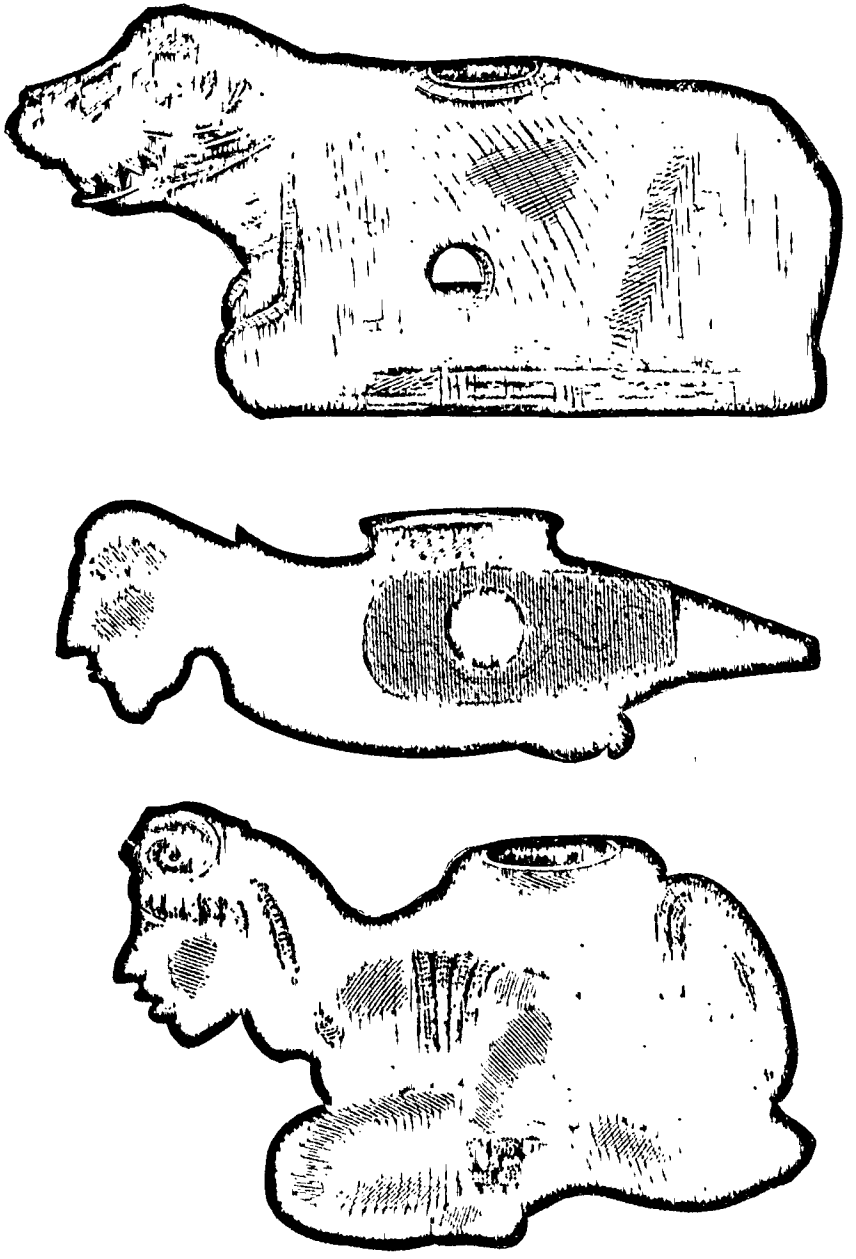
great chiefs, or high-priests, had their residence. After traversing these towns or villages, they terminated at the foot of a teocalli or artificial hill-dwelling of the chiefs. There are few curiosities in the southern part of North America so important as these great roads, which strike the imagination of all travellers. In Western Florida there is one distinctly visible, which runs in a straight line for sixty-five miles along the bank of the river Oklokoney. History is silent as to the origin of these great works, and the Indians of the present day make no use of them, preferring the paths which they trace in all directions. The American teocalli, which are from 500 to 666 yards in circumference, and from 18 to 50 feet in height, were generally square, and the side next the road formed a gently sloping bank, resembling the "Montagnes Russes." Some had wide steps leading from the road to the summit of the monument. Teocallis were very commonly placed in the midst of a centre of population; ruins of such are to be seen even in the heart of America, that is to say, in Alabama, Virginia, and even in Illinois. They differ from tumuli in being square instead of circular, in being surmounted by a great platform, and situated in the centre of a multitude of dwellings. In the ancient towns of Texas and Mexico this arrangement has been preserved in the plan of the towns, the teocalli giving place to a church, built in the middle of a vast open place or square, which forms the centre in which all the great roads meet.

By the side of these works of public utility must be placed those immense gardens of unknown origin, whose size and state of preservation strikes the traveller with astonishment. The perfect preservation of the plan of these gardens is probably attributable to the prairie grass so prevalent in North America, and which is so thick and

abundant as to form, on the surface of the soil, a kind of compact vegetable coating, which rarely allows any seeds which may accidentally fall to penetrate the earth and germinate. It is, moreover, this carpet of verdure which enables the traveller to trace all the sinuosities of the site it covers.

These gardens are square or semicircular, and are divided in parallel lines so as to form a series of ridges or beds two or three yards in width. Each of these beds is convex, its elevation in the centre being from ten to twenty inches. A very narrow path separates them from each other, intended no doubt for the use of the cultivators who attended to the garden. We are still in entire ignorance of the nature of the produce of these gigantic fields, laid out with such regularity. The finest and best-preserved among them are in Michigan, Indiana, near the Great Lakes, and even in Texas; where, at the distance of about 450 miles from the Gulf of Mexico, we have seen one more than eight miles in extent.

Besides these gardens, the agricultural population which inhabited the New World previously to the tribes actually existing, who live almost entirely on the produce of the chase, had also artificial meadows, many of which were situated in the midst of forests or on the borders of the woodland. In fact, the nature of the country, the configuration of the soil, as well as the agricultural implements of stone and brass found in those meadows, plainly show that in remote times these regions were covered with trees, which must have been burnt or torn up to make room for excellent pasturage in the immediate vicinity of human habitations. But how is it that in these countries, abandoned so many centuries ago by their inhabitants, the forests have not recovered the



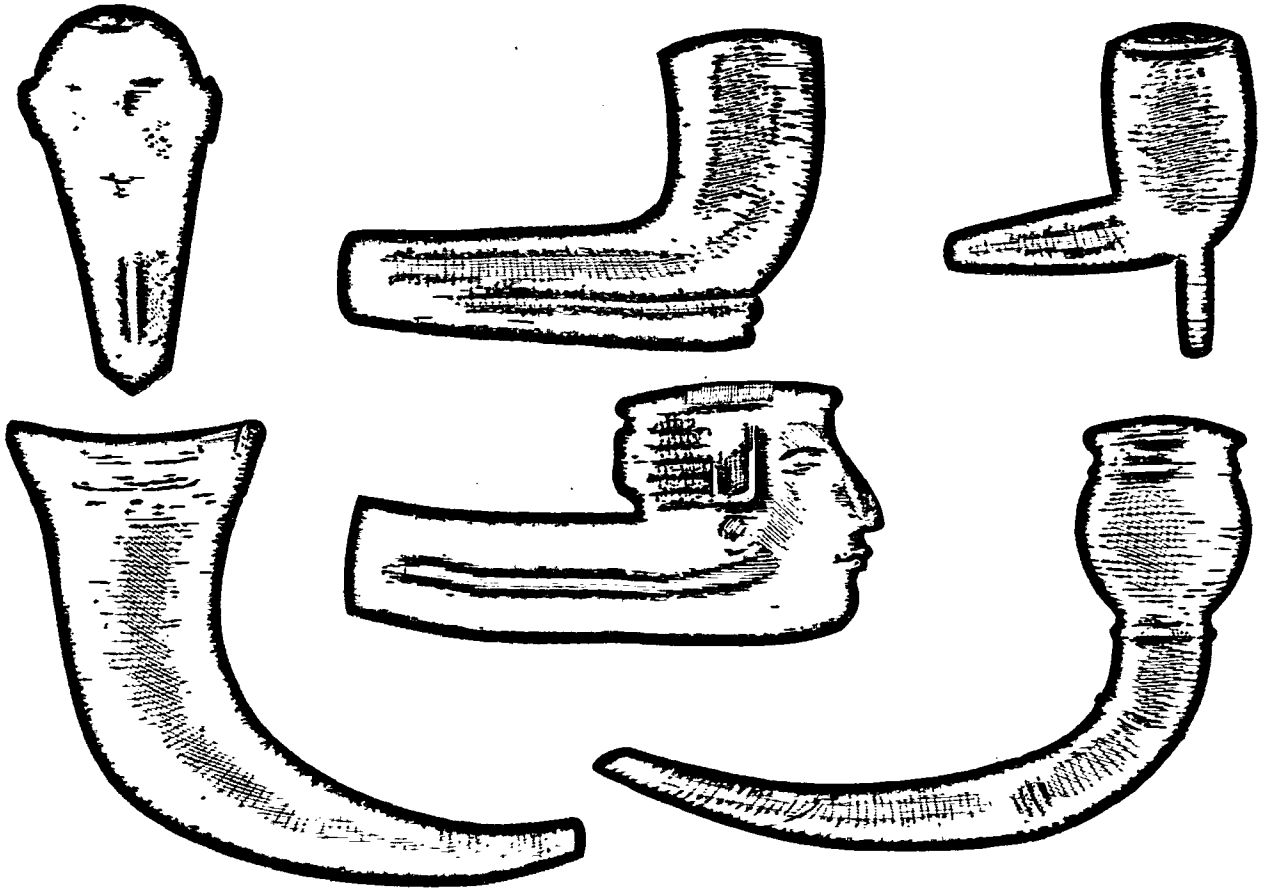
ground they had originally occupied? We believe that in fact this return to the primitive condition may have taken place at many points with which we are not acquainted, and that the greater number of those artificial meadows which are still in existence owe their preservation solely to the layer of green thick turf which covers them.

Many circumstances lead us to believe that the ancient inhabitants of North America worked the salt-water springs to procure salt. In Illinois there exists to this day, in a salt mine, an excavation 135 yards in circumference, in the middle of which a great pit had been dug, at some unknown period. Ashes, fragments of pottery in great quantity, and a conduit which served probably to drain off the water, have been found in this place. The pottery resembles precisely that enclosed in the tumuli and fortifications at Harrisonville in the county of St. Clair. Near the salt mines of Ohio have also been found numerous fragments of pottery and vases, evidently destined for the evaporation of water; and in the saltpetre caves of Gasconnade county, Missouri, hammers and axes similar to those of the tumuli.

Tumuli of all the different kinds have been carefully explored, in order to ascertain what they contained. That at Grave Creek attracted more particularly the attention of the learned, on account of its proportions and the inscription in alphabetical characters, of which we have already spoken. In the centre of this tumulus, which in form is a truncated cone of about 833 yards in circumference at its base, 83 yards at its summit, and 23 yards in height, a vaulted sepulchral chamber has been discovered, forming a parallelogram of four yards by two yards and a half. The wall was near four feet in thick-

ness, and was composed of unhewn stone and fragments of carbonised wood. In this chamber were placed, side by side, two human skeletons, one of which was that of a woman, almost reduced to dust, and wearing a great number of ornaments, such as pearl necklaces. About eighteen feet above this vault was another, placed transversely, rather smaller than the first, and containing a skeleton surrounded by more than 1700 beads made of marine univalve shells, five leather bracelets, and 150 plates of mica. But the most interesting discovery made in this tomb was that of the alphabetical inscription, concerning which we shall give details hereafter.

In another tumulus situated near Marietta, in the State of Ohio, there have likewise been found very curious objects, which had been buried with the person in whose honour the monument was raised. As in the tomb I have just described, there was the skeleton of a man in the centre of the tumulus; immediately above his head were three circular pieces of brass coated with silver, which had probably been the ornaments of a baldric or shoulder-belt; two small pieces of leather lay beside these ornaments. Near the skeleton was found a plate of silver about six inches long by two in width, weighing thirty grammes, which appeared to be the upper part of a scabbard, also two or three compartments of a brass tube which seemed to belong to the lower part of the same scabbard; but of the sword itself there was no trace. Various other brass and silver ornaments were also lying near the skeleton. The exploration of other tumuli brought forth new discoveries, among which must be mentioned first shells of the species *Manginella Florida*, which is very common on the coasts of Florida; rosaries, the beads of which are formed of



shells, invariably accompany the human remains found in these tombs.

A knowledge of conchology is by no means unimportant in the study of the origin of the first inhabitants of North America, who are supposed by some to have been descendants of the people of Asia; for it appears that they employed large marine shells for their personal use and for their sacrifices. The tumuli and the fortifications contain a great number of these shells, which are mostly of the species known as *Murex*, *Cassis cornutus*, and *Fulgur perversus*. These shells have formed the subject of long discussions among the most distinguished writers on American ethnography, who are far from agreeing as to the country which produced them. According to Rumphius, the *Cassis cornutus* is found at Amboyna, in the peninsula of Malacca, and on the shores of the neighbouring island. Humphreys maintains that it is peculiar to the East Indies and China. Linnæus believed it to be indigenous to the coast of America; but Bruguières, a more modern author, affirms that Linnæus was mistaken on this point, and that the shell in question belongs to the Asiatic Ocean. At all events, as the *Cassis cornutus* has never been found on the shores of America, it is highly probable that it was brought to that country from Asia.

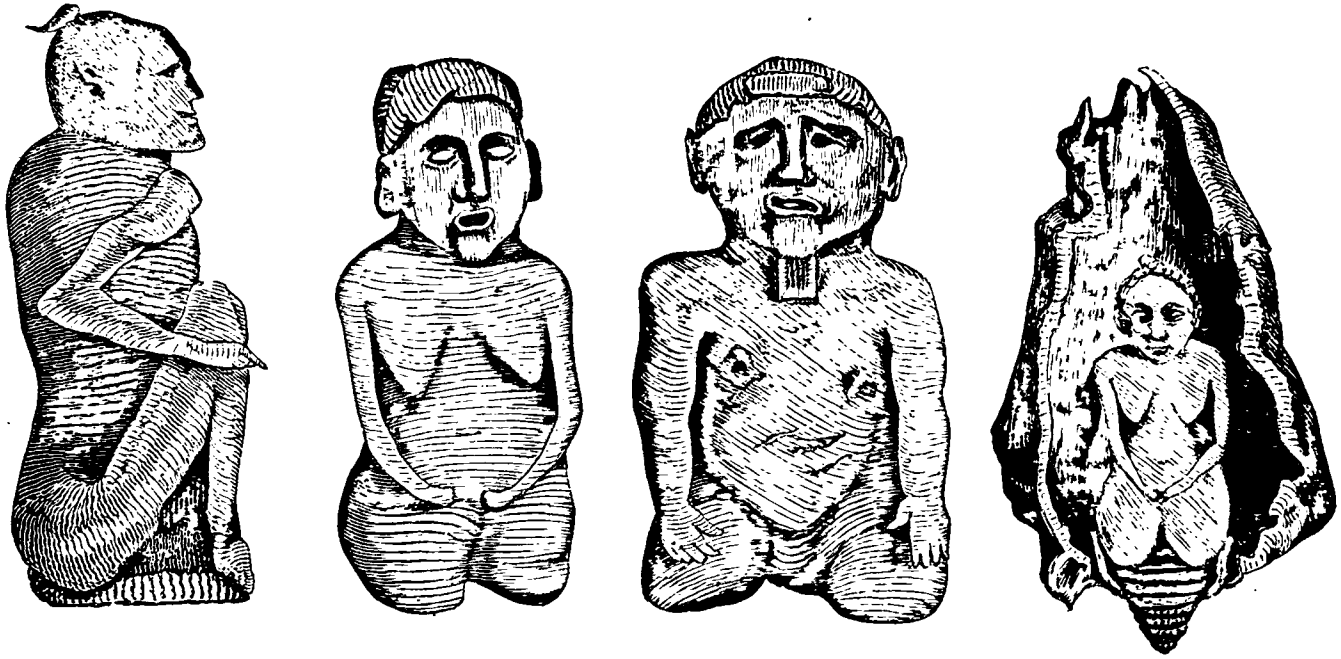
To the list of interesting curiosities discovered in the monuments left by the ancient Americans, or near their dwellings, we must add numerous bracelets of brass, smooth and polished; rings and tubes of the same metal, or of various kinds of stones; pipes of terra-cotta, slate, or steatite; pieces of jasper and of granite; rude sculptures in wood and in various mineral substances; very beautiful specimens of pottery, copper or stone axes, arrow-heads

and knives in obsidian; and lastly idols, which demand a particular description.

Perhaps the most curious of these idols are those found in the State of Tennessee. One of them was enclosed in a shell of the species *Cassis flammea*, which is of tropical origin; the others had no such accessory. All these figures are either seated on their heels or kneeling, the hands being placed on the thighs or on the abdomen; they are quite naked, and represent sometimes one, sometimes the other sex. The largest is about fourteen inches in height, and they are generally cut in a sort of stone which is very common all over the American continent.

Mr. Proost, professor in the University of Tennessee *, is of opinion that all these idols were representations of the worship of Phallus similar to those exposed in the sanctuaries of Eleusis. Father Kircher assures us, on the authority of Cortez, that an Egyptian form of worship, recalling the mysteries of Isis and Osiris, was established in America. One of these idols would appear to be a badly finished image of Priapus. Those which are made of a mixture of clay and pounded marine shells are easily recognised, by the form of the face and the elongated eyes and chin, as representing a Tartar type. One of them has the scalp-tuft on the crown of the head, in imitation, very possibly, of the lock of hair left growing on the heads of the Chinese. The Asiatic type has been remarked also in a small stone idol found at Natchez, in the State of Mississippi, in the midst of a site where, according to tradition, an Indian temple existed long before the arrival of the Europeans.

* See his articles in the "Transactions of the American Ethnological Society," vol. i. p. 355.



Near Sandusky, in the State of Ohio, at a depth of six feet in the ground, a pipe has also been found, showing skillful workmanship, and made of a material which is believed to be the real graphic talc of which idols are made in China; and, as this substance has nowhere been found in America, it is concluded that the pipe was brought from Asia. Another object no less interesting has been found near a tributary of the Cumberland River in Kentucky, namely, a bottle formed of three heads admirably modelled, and with a neck growing narrower towards the mouth. These three heads are joined together behind, and each of them is about two inches and a half in length, from the top of the forehead to the chin. They are in excellent preservation, and present the Tartar type of countenance at different ages. The face of the youngest is covered with a slight coating of vermilion, and has a small mark of a more vivid shade of the same colour on each cheek and on the chin. The second face represents a person at the age of manhood, and is painted in several colours. A line of deep red surrounds the eyes; another line of the same tint passes from the tip of one ear, under the chin, to the upper part of the other ear. The third is the face of an aged person; it is painted yellow round the eyes, and a yellow line is traced from ear to ear, following nearly the same course as the red lines described in the preceding figure. The neck of the bottle is triple; its length is less than that of the heads, and it is five inches in circumference at the mouth, and grows wider towards the base. This vase is made of fine clay of a dark colour, and hardened by the action of fire; it would contain about a quart of liquid.

In the saltpetre cave of Warren county (Tennessee), two bodies, one of a man, the other of a woman, have

been found, seated in wicker baskets. When they were discovered, their flesh, hair, teeth, and nails were still in existence; they were wrapped in deer-skins, and in a cloth made of the fibres of the bark of trees, and ornamented with feathers. The woman carried in her hand a fan of turkeys' feathers, made to open and shut at pleasure.

Another discovery, equally important in connexion with the history of the ancient inhabitants of America, is that of the mummies, which are found in the greatest numbers in Kentucky, and above all, in the Mammoth Cave near Louisville. This cave contains an immense quantity of nitre, and the preservation of the human bodies buried in it is attributed in a great measure to the presence of this substance, with which the earth is saturated to a considerable depth. One of these mummies was found nine feet beneath the surface of the soil; it was placed between two large stones, and covered by a flat slab. The knees were drawn up to the chest, the arms crossed, and the hands folded one over the other at the height of the chin. The hands, nails, ears, hair, teeth, and all the features generally were in perfect preservation. The skin resembled leather of a yellowish colour; there were no traces of incision or seam indicating that the viscera had been removed. Though this mummy was that of a person six feet in height, it was so dried up that it did not weigh more than twelve or fourteen pounds. The body was not surrounded either by bandages or by any bituminous or aromatic substance, but was wrapped in four coverings. The first or interior one was composed of a stuff made of fine cord doubled and twisted in a peculiar manner, and of large feathers interwoven with great art. The second wrapping was of the same stuff, but without feathers. The third consisted of a deer-skin

ANCIENT POTTERY.

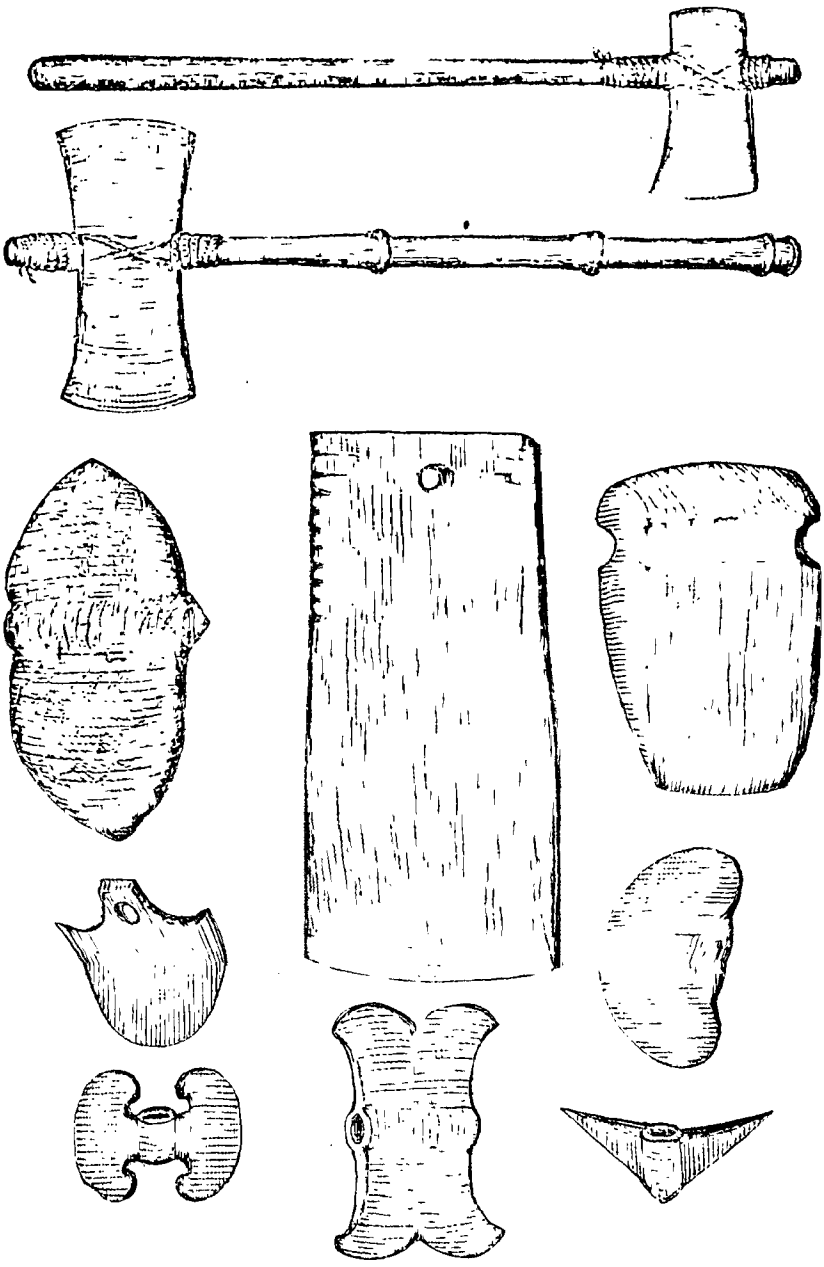
without hair, and the fourth and external covering of another deer-skin, but with the hair.

These mummies have greatly occupied the attention of American antiquaries, for they seem to belong to a people anterior to the present race of Red Indians, and furnish a powerful argument against the supporters of the autochthonic theory. The American mummies are, for the most part, swathed in the Egyptian fashion, and have been found only in the neighbourhood of the great rivers, that is, near places which vessels could approach. Some writers argue from the discovery of the mummies we have described, that the people who preceded the present Indian race in America came from the East. The learned Dr. Mitchell, in a dissertation on these mummies, endeavours to prove that the ancient inhabitants of America were of Malay origin, and resembled the natives of the islands of the Pacific Ocean and of Australasia. He founds this opinion, firstly, on the resemblance of the cloth in which these mummies are enveloped to that brought from the Sandwich and Feejee Islands which is likewise made of fine cord, doubled and twisted without the help of a spinning-wheel; secondly, on the fact that feather mantles are applied to the same use by the islanders of the Southern Ocean; and lastly, on several other circumstances which appear to us of less weight than the preceding.

The great labour requisite for the construction of the tumuli, fortifications, walls, and roads of which we have spoken, their regularity and the purposes for which they were destined, and the works of art and mummies found in the artificial hillocks and tombs, would seem to indicate that they were the work of a people who had passed from the nomadic and savage state to the condition of

agriculturists, and who, if they emigrated from one country to another, did so very slowly, establishing themselves in a solid and durable manner in the countries where they made halt. The state of art among a people capable of producing monuments so singular and imposing has naturally engaged the attention of antiquaries, and formed the subject of most curious and interesting researches, which, however, have hitherto led to no marked result. No name has yet been assigned to this race, no certain date to the monuments they have left. We can only hope that new discoveries in science and research may soon solve this mystery, which has hitherto been regarded as impenetrable.

We shall conclude this account of the Indian monuments by stating, in a few words, our own opinion regarding the age, the geography, and the authors of the antiquities scattered over the surface of the United States. In the valleys of the Ohio, and of the Mississippi, where the tumuli and ancient fortifications are found in the greatest number, trees of enormous growth have sprung up in the midst of the ruins. The size of these trees furnishes the surest data on which to form a judgment as to the period when these different constructions were abandoned. On the summit of the tumulus of Crave Creek, a beech was found growing, which was covered to the height of nine feet and a half with names and dates of the reign of George II., in 1754. A short distance from this beech lay an oak, fallen from old age. In 1828, the trunk of this oak was sawn and carefully examined; it was found to contain about 500 concentric circles, which, allowing a year for each circle, proved that the tree must have begun to grow in 1328, that is, 164 years before the landing of Christopher Columbus in



COPPER AND STONE AXES.

America. A naturalist, whose name we do not recollect, affirms that the oak grows during 500 years, that it then remains 500 years in *statu quo*, and that it is another 500 years in dying. This calculation, which we hardly think exaggerated, gives an idea of the great antiquity of the American tumuli, on which enormous oaks, such as that we have just described, are found growing amidst the remains of other oaks reduced to dust from extreme old age. Dr. Cutler, in 1787, found trees of immense size on the ruins of Mariette; many of those which were cut down were hollow, but one, in which decay had only just commenced, showed 463 concentric circles, and must have existed more than that number of years. Others contained 300 or 400 circles, and on the ground all around lay huge decayed trunks, measuring six to eight yards in circumference. There was, therefore, every reason to believe that previously to the existing growth of trees there had been another of equal age; and we are warranted in concluding that the ruins in question were abandoned 900 or 1000 years ago. But it still remains impossible to determine the exact date of their erection.

The question, who were the architects of these monuments, is no less enveloped in obscurity. Were they Red Indians, or did they belong to a race anterior to that which existed in America at the date of its discovery by Christopher Columbus? To this fundamental question the great majority of antiquaries and ethnographers, both of the Old and the New World, reply that these monuments are the work of a people entirely distinct from the present Indian race; but of what people, then, none can say. Some believe that they were idolaters, who came in great numbers from the tropical regions of Asia, an

opinion founded on the number of tumuli and the character of the idols found in all the countries where maize is cultivated, and particularly in the southern part of the United States. It may be answered that, as the Natchez were still idolaters at the time of the arrival of the Europeans, they were very possibly a remnant of the population generally regarded as extinct.

On the other hand, writers are not wanting who maintain that these people came from Asia, by Behring's Straits; that they naturally followed the course of the great rivers and lakes between the Rocky and the Alleghany Mountains, and thence spread over the new continent; a theory corroborated, it is argued, by the fact that when the Europeans landed in America, in the sixteenth and seventeenth centuries, the Indian population was much more numerous in the northern than in the southern parts of North America. All these contradictory opinions, founded on partial observations, fail to afford us any certain knowledge as to the authors of these vast constructions, which are the admiration of the world.

And yet America is not the only country where tumuli are found; they are met with in Wales, Scotland, Ireland, France, Sweden, Russia, Tartary, and even in Africa. Those in Ireland and in the plain of Troy* are precisely similar to those of the United States. In America they are scattered in profusion from Lake Erie to the Gulf of Mexico, increasing in number and size in proportion as they are situated farther south. In Texas, New Mexico, and South America, they are also found in great numbers. What are we to conclude?

* See Dr. Gerard Boate's History of Ireland, part iii., containing a discourse concerning the Danish mounts, forts, and towers of Ireland; and Ledwich's Antiquities of Ireland, 1790, Essay iii.

The celebrated historian of America, Robertson, adduced many arguments * against the idea that a civilised people had existed in ancient times in the New World; he asserts that the nations most advanced in civilisation on that continent had no acquaintance with many simple inventions which are as ancient as society itself in the other parts of the globe, and which are found everywhere at the first periods of social life. "It is evident," he says, "that the tribes which originally migrated into America belonged to nations as barbarous as were their descendants when discovered by the Europeans: for the arts of taste and luxury may decline and perish through the violence, the revolutions, and disasters to which nations are exposed; but the arts necessary to life cannot be lost by a people which has once known them." Probably, when Robertson spoke thus, he was ignorant of the existence of the magnificent works which we have described; he did not know that the ancient Americans were acquainted with the use of metals; and that, even in the present day, the Navajos, Zuñis, and the Jemez manufacture woollen and cotton tissues which are much prized.

Voltaire shows still greater ignorance in his Essai sur les Mœurs, where he affirms that America was divided into small societies, to whom the arts were unknown; that these tribes all lived in huts, were clothed in skins in the cold climates, and went almost naked in the temperate regions; that some fed on the produce of the chase, others on roots, which they kneaded; that they did not seek any other mode of life, because men do not desire what they do not know; that, in short, their industry did not go beyond their wants. Since the time of Voltaire

* Book iv.

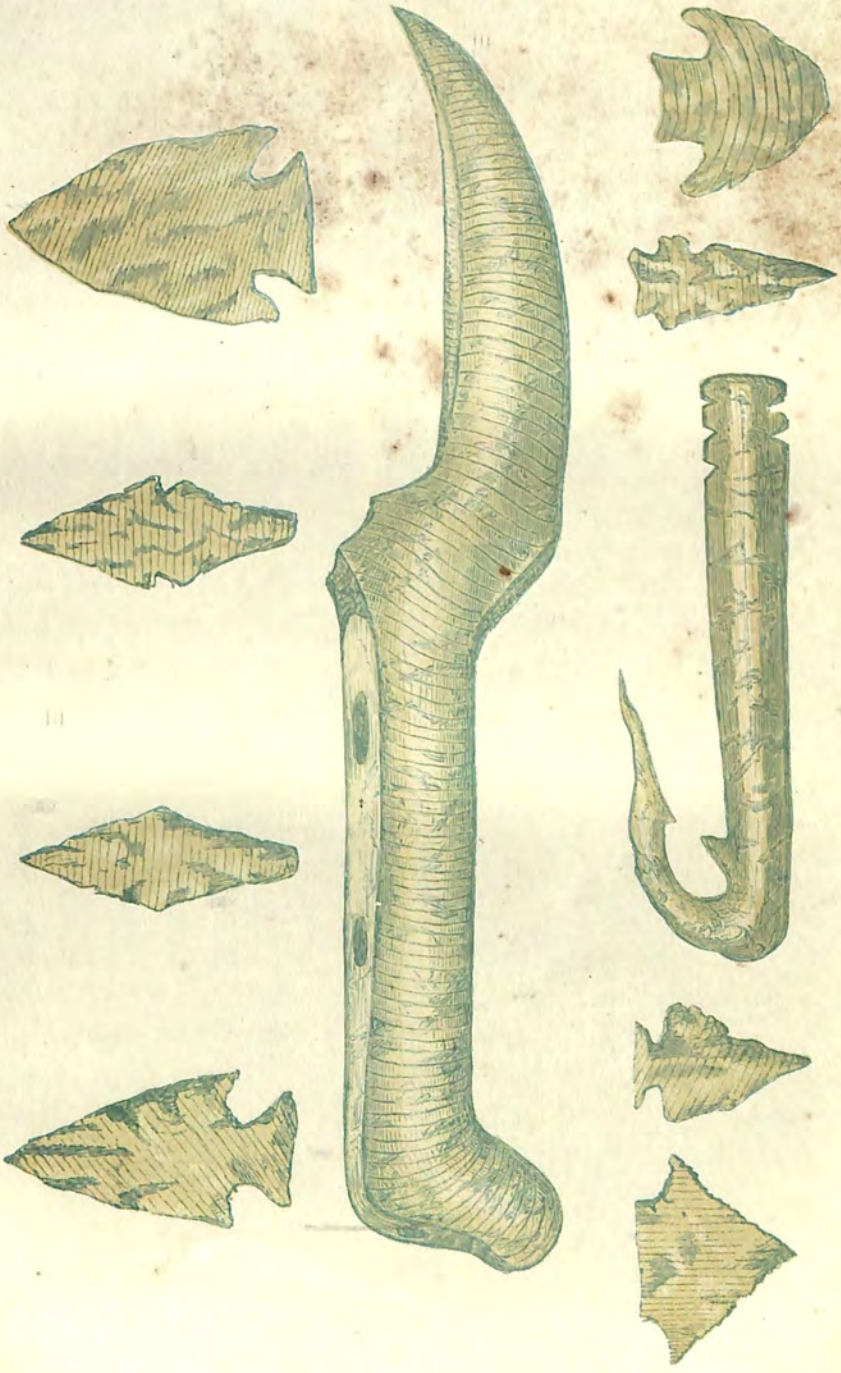
ethnographical science has made great progress, and although the annals of the Indian population are still very far from being complete, the daily discoveries of travellers prove that all these theories of the human mind had no basis but in the imagination of those illustrious dreamers. Volney*, in his elucidations on the subject of the savages, explains absolutely nothing. He had never seen the works of art of which we have spoken, for he says the Indians have neither a method of transmitting ideas, nor monuments, not even traces of any antiquity whatever. "In the whole of North America, except in Mexico," he adds, "not one edifice, nor a wall of hewn or sculptured stone, can be cited in proof of the existence of ancient arts. Nothing has been found but mounds of earth or tumuli, which served as the tombs of warriors, and lines of circumvallation." We know now what value to attach to the assertions of M. Volnéy, which are no more to be relied on than those of Voltaire.

M. de Humboldt†, who visited the American antiquities, supposes the monuments to be the work of Scandinavians, who, from the eleventh until the fourteenth century, frequented the coasts of Greenland, Newfoundland, and of a part of South America. But the trees which have grown on the ruins of these monuments show them to have been already abandoned at a period anterior to that assigned by M. de Humboldt for their erection.

These opinions, contradictory in themselves, and unsupported by facts, only serve to prove how great is the obscurity which still veils the origin of these imposing

* Volney, Tableau du Climat et du Sol des États Unis, tome ii. art. 5. Paris, 4to. 1803.

† Voyage to the Equinoctial Regions.



ARROW HEADS AND OBSIDIAN KNIFE.]

vestiges of a power which is no more. If we might venture an opinion on a question so arduous, and on which the most learned men have scarcely thrown a gleam of light, we would say, with all those writers who have spoken pertinently on the American antiquities, that they are, in truth, the work of a numerous and civilised people; but, as we do not think it possible that such a people can have existed during so many centuries, and passed quite unperceived from the earth, we firmly believe in its decline and fusion with the actual race of Red Indians, who wander and vegetate in the solitudes of the wilderness, as an example to the world of the vicissitudes of nations and empires. Would it be the first time that a civilised people has been merged in a barbarous population? And if, in America, the latter has not preserved any remnants of past civilisation, it may be because it has in its turn been subjected to the same laws of destruction.

CHAP. XXI.

INDIAN IDEOGRAPHY. — HIEROGLYPHIC DOCUMENTS. — THE PICTOGRAPHY OF PRIMITIVE PEOPLE. — THE GRAVE CREEK INSCRIPTIONS. — TOMBSTONE SECTION. — CHARACTER OF INSCRIPTIONS. — THE DIGHTON ROCK HIEROGLYPH. — INSIGHT INTO THIS INSCRIPTION. — THE EL MORO ROCKS. — INSCRIPTIONS OF NEW MEXICO. — HIEROGLYPHIC PAINTINGS OF THE ESTUFAS. — THE ROCKY DELL. — INDIAN PICTOGRAPHY. — RED SKINS. — SYMBOLISM. — PAINTED SKINS. — INDIAN TOTEMS. — HERALDIC SIGNS. — CONCLUSION.

Most European travellers who visit North America with scientific views traverse the United States, from north to south, and from east to west, without venturing to penetrate the great south-western solitudes, which they suppose to be arid and desert. The most courageous pass through the Indian territory in company with men more or less absorbed by their own affairs, or imbued with prejudices and hatred against the Red Skins. To justify their very slight glance at remote and dangerous lands, these prudent travellers repeat, after the merchants of the American frontiers, that Indians are vermin of which the soil must be delivered; that nothing good can be got out of them, that they deserve no kind of notice or encouragement, being mere brutes. Thus do these men, learned from intuition, return home to regale their countrymen with the history of a people they have hardly perceived, and to describe places into which they have never ventured

to enter; the consequence is, that their narratives abound in errors and exaggerations. One cannot be too guarded against writers who invent respecting matters they know nothing about, and who translate while misunderstanding the works already published on the same subject. Very few men for truth's sake, and without any preconceived opinions, travel in those regions, and sojourn there with the firm intention to collect all possible documents on the lives and history of the Red Skins, to consult their oral traditions, to study their monuments, and to draw thence, in the meditations of silence and solitude, materials that impart certain knowledge and exact deductions. It is the American historians who have taken the most pains to observe and describe the natives of these countries, and yet they have not known all the documents engraved by Indians on the surface of their rocks, or on the bark of the trees of their aged forests. Even Mr. Schoolcraft, who has long disquisitions on modern savage ideography, has not mentioned the hieroglyphics that are found in Rocky Dell, on the El Moro Rock near Zuñi, nor other inscriptions to be met with in the different countries of Jemez and Navajos, and on the borders of the William, the Gila, and the Colorado.

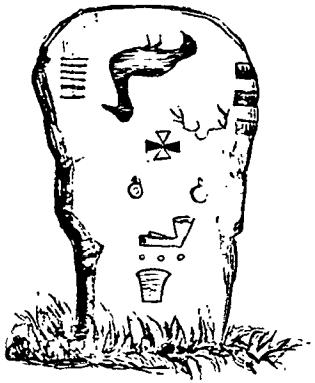
Among the archæologists and the ethnographers of the two worlds who have noticed the Indian ideography and American antiquities, few have attempted to decipher the species of hieroglyphics by means of which the Red Skins have at all times endeavoured to make their thoughts understood; whether simply to recall a fact, an article of faith, or a custom, or to transmit to posterity the memory of some great event that marks with vital interest the life of a man or the history of a nation. The cause of this want of exactitude is less in the difficulty of the

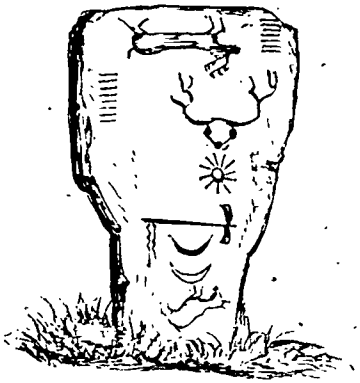
study and the want of materials to pursue it, than in that affectation of disdain generally professed for Indians, who are rather rashly denied all intellectual and artistic capacity. It is true that the variety of hieroglyphic signs and ideographic images, and their strange and ill-formed figures, may have discouraged some antiquarians, who would prefer seeing in these vagaries nothing but the productions of rude imaginations, tracing on rocks, trees, and animals' skins, fantastic figures and characters without any meaning whatever.

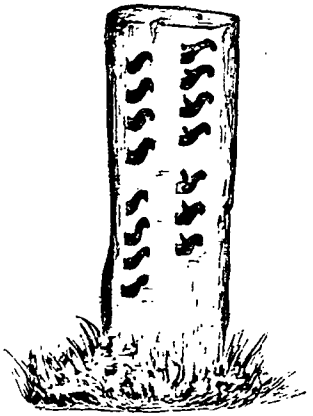
I readily allow that the Red Skins are far from being endowed with remarkable abilities; but seven years spent among them in profound, constant, and important study of their morals, customs, and history, have convinced me that the disdain professed for their understanding is greatly exaggerated, and that they are, to a certain degree, capable of imitation, and even of invention. Surely, if science overlooked all but civilised people, there would be an immense gap in the annals of mankind, which would throw into obscurity the origin of nations, their unity, emigrations, and the relations that exist amongst them.

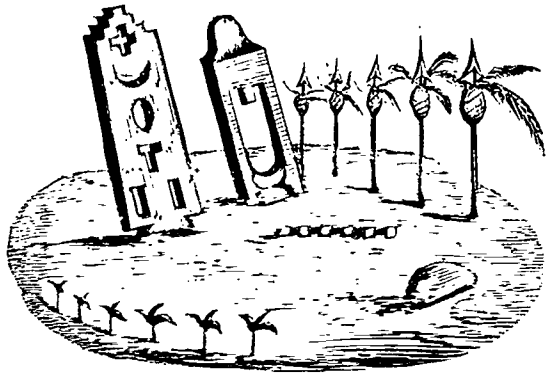
I cannot enter into all the details of the science of Indian ideography, but I shall endeavour to prove that materials are not wanting to facilitate profound and correct studies on the matter.

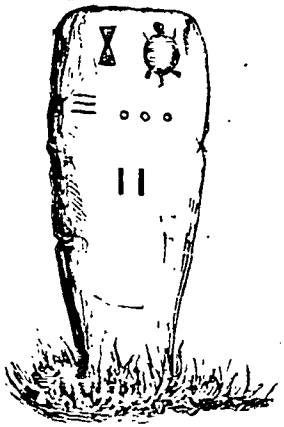
In order to represent their ideas, the Indians who inhabited South America before Christopher Columbus's discovery made use of those symbolical figures common to all mankind before the invention of alphabetic characters, which are like the uncouth drawings that children are in the habit of tracing on walls with chalk or charcoal, and are more or less rough according to the











INDIAN INSCRIPTIONS.

degree of barbarism in which the people in whose country they are to be found are plunged.

The epoch of the agglomeration of people, of their formation into colonies, tribes, or constitutional societies, has nothing to do with the ideographic system; whereas a great analogy can be traced in the geographical position, the climate, and the characters of individuals, and that in nations far apart from each other, when in their first isolated state they began keeping records of their public events, being at the time in the same degree of barbarism. One cannot but see a great resemblance in the disposing of the hieroglyphic forms of objects amongst the monuments of the various Indian tribes of North America. The Siberian inscriptions met with on the borders of the Yenisee, representing episodes of hunting, and the newly discovered one found on the perpendicular rock near the Irtysh in Tartary, are illustrations of this. Learned men, who have studied the Peruvian and Mexican ideography, find in these monuments a great likeness to the signs of the ancient American inscriptions. Ten miles north of Arequipa, at Huaytara in the province of Castro-Vireyna, and near Huari in Peru, on bits of granite stone, are found multitudes of hieroglyphics representing flowers, birds, and fortifications, very like those of the Rocky Dell, of El Moro, and of several other localities of New Mexico, and of a date certainly earlier than the Incas dynasty. In Sweden, Norway, and Lapland, the same analogy is to be met with. And yet it is evident that these are the works, not of one, but of several distinct peoples, and that at the time of their infancy in civilisation. At a later period this method of reproducing ideas became an art, which the Chinese and Egyptians brought to great perfection.

There has been discovered in the tumulus of Grave Creek, near Wheeling in West Virginia, an inscription in alphabetical characters; it is the only one of the kind known in America, and, though much ado has been made about this discovery, I think its importance far less than has been supposed. For, after all, it merely attests the presence in America of a man of the old continent. Now, it has already been observed in the first three chapters that historical documents of the emigration of families were not wanting. Nevertheless, this alphabetical inscription at Grave Creek may assist us some day in finding out the name and country of the man whose merit had obtained such a sepulchre. It is, therefore, with pleasure that I enter into details of the manner in which this tumulus was discovered, though some learned men have denied the fact of its existence.

On the 19th of March 1838, Mr. Abellard, grandson of Mr. Joseph Tomlinson, proprietor of the land on which the tumulus is situated, while overlooking the workmen employed in some building operations there, caused a tunnel to be driven horizontally from the base to the centre of the monument. This tunnel was 9 feet 4 inches wide, and more than 9 feet high. He next sunk a shaft at the inner extremity, and on reaching a depth of 111 feet came on the ruins of a vault or sepulchral chamber. The earth was dry, mixed, and so compact, that for a space around there was no need of timber to prevent the sides from tumbling in. Some parts of this earth crumbled like ashes, and sent forth a strong oily odour. The sepulchral chamber was dug in a parallelogram form, in a small natural elevation on which the tumulus was built. The angles of the parallelogram corresponded

exactly with the four cardinal points. The dead-room was constructed with perpendicular posts, horizontally placed, over which were heaped rough stones.

A shaft was then commenced at the summit of the tumulus, and at the depth of thirty-five feet another vault was discovered, but in a different direction. In this second chamber was found the inscription of which so much has been said; it is composed of twenty-two characters, in three lines, with a cross and a mask, engraved on a dark hard stone of an elliptic shape, about two inches and a half long and two inches wide, and about five lines thick. Learned men, who have most carefully examined this inscription, agree neither on its origin nor on the nature of the characters, of which four bear a resemblance to the Etruscan signs, four to those of Thugga (Africa), five to the ancient Runic in Scandinavia, six to the Touarik, seven to the old characters found in Ireland, ten to the Phœnician, and fifteen to the Celtiberian. M. Rafn*, one of the most erudite antiquarians of Denmark, after having observed that at first sight one would be tempted to pronounce this inscription of Celtiberic origin, adds that these characters present a great analogy to those of the ancient Gallican or Anglo-Saxon bards. M. Jomard, alluding probably to M. Rafn's works on the subject, says: "These characters have been compared to those of the ancient northern languages, but this analogy is less striking than is that to the ancient Libyan. There is also much likeness to be traced to the Celtiberian or rather Iberian alphabet, which is not wonderful, since in all probability this idiom had its origin in Africa, for

* Memoirs of the Royal Antiquarian Society, 1840 and 1843. American section.

it is well known that Iberia was one of the first and greatest conquests of Carthage."

M. Rafn and M. Jomard are, nevertheless, authorities far too important for me to decide between them. For if many reasons seem to support the opinion of the Danish antiquarian, we find, on the other hand, in Mr. Walter Oudney's Touarik alphabet, characters favourable to M. Jomard's view of the question, for the second, fifth, and sixteenth characters of the American inscription have a striking analogy with the *yet*, the *gid*, the *gin*, and the *gir*, represented by Mr. Oudney; and the tenth and the fifteenth characters are very like Mr. Oudney's *gigh*, *go*, and *iz*. As to the other American characters, they may be formed on the Libyan alphabet, of which Mr. Oudney gives a specimen; for they have a real family likeness, except the *yok*, the *gugh*, the *go*, and the *a*, which are accented, whereas none of the American characters are furnished with accents.

At first sight one would suppose that these characters date from the epoch of the migration, when a modified civilisation spread from the shores of the Mediterranean to the west and north of Europe, at which time the Roman alphabet was yet unknown. This inscription has nought in common with the American-Indian ideography. The angular forms of its characters give them a resemblance to the Etruscan, which are composed of simple lines cut short; in others, there are lines with straight or sharp angles, such as were used by the Phœnicians before the introduction of the Hebrew alphabet on the borders of the Mediterranean. M. Jomard, if I mistake not, declares that such modifications are to be met with in the alphabets of the Etruscans, Pelasgians, Oscans, and Arcadians; as also in the North of Europe and in ancient Gaul, amongst

the Celtic and Scandinavian races. M. Rafn, as has been already observed, thinks this inscription Runic of the species known to the rude Anglo-Saxons, and not such as might have belonged to the Normans at the time of the introduction of Christianity. These various opinions prove that there still exists great uncertainty about the Grave Creek stone. Is it a sign, a motto, an ornament, or a historical remembrance? May this enigma be some day solved!

But no American inscription has excited the interest of the antiquarians of the two continents like that of the Dighton Rock, situated at the east of the mouth of the Taunton, near Assonet in Manchuctka. The width of the rock is about forty-four feet and the height five feet; the surface is polished, either by nature or by the hand of man. For a long time it was covered with moss, detritus, and dirt, so that the inscription was not noticed till the middle of the last century, when it became the object of several reports, and the subject of numerous scientific discussions. A great many of the signs that composed it were rubbed out by the operation of clearing away the lime, weeds, and dirt that covered the rock. The characters forming this inscription are hieroglyphic, kyriologic, and symbolical, representing, according to the Sachems' interpretation, the exploits of a great warrior prophet. The strokes, roughly sculptured, seem to have been cut in the stone with a cylindrical metal instrument. The depth of the incision is only about two lines, and the width varies from four to six lines.

M. Mathieu, a French writer*, asserts that the hieroglyphics engraved on Dighton Rock were executed by

* Cited by Mr. Warden in his work on American Antiquities.

the Atlantides about A. M. 1902; that In, son of Indies, king of Atlantide, is named in the inscription as having headed an expedition to America in order to obtain a treaty of commerce. That this same In became the father of a distinguished family in China, and lived at the time of Yao, to A. M. 2296; that is to say, forty-eight years after the submersion of the Atlantic Island, or 1800 years before the Christian era. M. Mathieu adds that these characters are the same as those used in the Chinese numerical system, as also in that of the Romans, who pretended that they received them from the Pelasgians, who in their turn attributed their origin to the Atlantides.

One cannot, however, help observing, that if In lived in 2296, the Atlantides could hardly have mentioned his expedition in 1902, unless it were as a prophecy; but that is not probable, for the inscription indicates a historical fact gone by, and a battle in which several were slain. It is, therefore, more reasonable to suppose that it referred to an illustrious personage represented by one of the totems* placed about the middle of the rock, and this warrior or his descendants may have wished thus to perpetuate the memory of this glorious event.

Mr. Yates and Mr. Moulton, in their "History of New York," say that this inscription is of Phœnician origin, and found their assertions on the resemblance of some of the lines thereof to the Phœnician characters which are like the letters A M O P W X. This proof does not appear very conclusive, inasmuch as alphabetic characters denote a rather advanced state of civilisation, in consequence of which they are never found on the ancient American continent, at least, mingled with hieroglyphic signs. The pre-

* For an explanation of this word *totems*, see p. 425.

tended alphabetic characters are only after all symbolical signs; thus, O represents the sun in the Red-Skin pictography, X a dead man, M an abode of some kind or other, but as the form of these signs is rather arbitrary, it is very easy to give them an erroneous interpretation.

One still meets hieroglyphic inscriptions in the Connecticut State, in those of Georgia, of Kentucky, of Minnesota, of Ohio, and Rhode Island. There are some very remarkable and well-preserved in the Island of Cunningham in Lake Erie. The Red Pipe-stone Quarries of the meadow hillocks conceal numbers. There are others to be met with in the mountains in the neighbourhood of the Gila, the Colorado, and near the Sierra de Zuñi in New Mexico. As these last never have been mentioned in any scientific or geographical work published in Europe, it will, perhaps, be as well to say a few words about them.

The inscriptions in question were found in a valley which doubtless formed part of the ancient road that led from Santa Fé to the Colorado of the West or to Mexico. They cover the lower part of a vertical mountain, which is quite smooth, to the extent of half a mile. The pass that cuts through this mountain is about seventy miles south-west of Santa Fé, by 108° 29′ W. long., and 35° N. lat. The inscriptions are engraved at man's height, and are for the most part in Spanish, though some are in Latin; the rest are hieroglyphics. The lower parts were nearly hidden by thickets of cactus, fern, and chiefly by bunches of *Pandanus candelabrum*, which plants are very common in those regions.

The Spanish inscriptions are of different dates; there is no doubt that some were engraved by the comrades of John of Oñate, when he conquered that country in 1595,

but the archives of Santa Fé having been burnt by the Indians, it is very difficult to ascertain who were the authors of the inscriptions before the year 1680. However, all those belonging to the seventeenth century are in a great measure unintelligible. In 1681 Antonio de Otermin received orders from the Viceroy of Mexico to visit and subdue this country. The governor immediately marched towards the towns occupied by the Cochites, who opposed to him the most energetic resistance, so that, as he had come with only a small number of soldiers, he was obliged to return the same year to El Paso, which was at that time the chief town and residence of the Government. Gerbacco Cruzats succeeded Antonio de Otermin. The following year he renewed the expedition against New Mexico, and took possession of the capital, but it was not till 1695 that the country was completely pacified by Curro Diego de Bargas Zapata, who penetrated among the Zuñis. He had, nevertheless, some partial skirmishes with unsubdued tribes, and this valley, which one may call the inscription vale, seems to have been the road generally taken by the Spanish troops, who took pleasure in leaving traces of their passage on the rocks of the pass.

Among these inscriptions were the following, which I give in English :—

"By this way has passed the General Don Diego de Bargas, on his way to conquer Santa Fé to the royal crown. New Mexico, A.D. 1692."

"In the year 1716, the 26th of August, Don Felix Martinez, Governor and Captain-General of this kingdom, passed here on his way to reduce and unite Moquis. . . . Licensed Chaplain, brother Antonio Camargo, guardian and ecclesiastical judge."

"Bartolomé Narrso, Governor and Captain-General of the

province of New Mexico, passed by here for the king in returning from the Zuñis, the 26th of July, in the year 1620, to whom he granted peace, and the favour of becoming subjects of his majesty, to whom they promised obedience; and this they did of their own accord, knowing that it was both prudent and Christian. . . (Here several words are rubbed out.) . . to a distinguished, invincible, and famous soldier we love . . (The rest is defaced.)

"By this road have passed the sergeant-major and Captain Juan Archutelo, and the traveller Diego Martin Barba, and the second lieutenant, Juan Ynes Josano, in the year 1636."

"By this way passed with despatches (the names are unintelligible), the 16 day of April, 1606."

The greatest part of the other Spanish inscriptions are insignificant: half are defaced; others are merely names or dates, many of which are of the same epoch; others are even later than those already mentioned. Crosses are often found on supposed tombs, or in lonely spots: sometimes beside a star, and again in the middle of a circle indicating an Indian pueblo. This symbol of Christianity would tend to prove that Catholicism had already penetrated among the tribes of those vast solitudes. One part of the mountain seems to have been chosen for tracing some historical fact on it with long details. If one may trust to the totems, the human face and open hands are symbolical of friendship, the zigzag lines indicating thunderbolts, the circular lines giving the notion of the plan of a pueblo, &c. But we are obliged, in some measure, to guess by means of comparisons at the subjects of ideographic relations; for Indians, naturally suspicious, are very reserved in their conversations with strangers, and seldom divulge the secret of those signs by which they perpetuate the remembrance of their annals.

It is rather a remarkable circumstance, that in those countries the Indian hieroglyphs, though ancient, are very well preserved, and withstand better the injuries of time, seasons, and mankind, than do the Spanish inscriptions, even when of a more recent date. Some travellers suppose that the Spanish inscriptions are not more than two centuries old; whereas the Indian hieroglyphs date at least as far back as six centuries ago. This calculation appears to me rather arbitrary; for the length of duration depends a great deal on the depth of the lines. It seems rather strange that the companions of Coronado have not mentioned this rock in their account of the expeditions for the conquest of New Mexico. No doubt the pueblo above was already in ruins, or, perhaps, was one of the seven towns of Cibola.

In the interior of those little religious monuments called *estufas*, one finds a system of picture writing more perfect than that of ordinary inscriptions. The tribes of New Mexico not yet converted to Catholicism adore the planets and fire, as did their forefathers; emblems of this worship, and the signs of their veneration for Montezuma, are painted on the surface of the interior walls of the estufas. These paintings, in point of form and colour, have great analogy with what may be called Red-skin pictography, notwithstanding they are anterior to the discovery of America by Christopher Columbus. The outlines of the kyriologic signs are pretty correct, and display rather a good notion of the art of imitating nature. In the estufas, more or less in ruins, in the country of the Jemez, one sees, painted red and blue, plants, birds, and animals, such as turkeys, stags, wolves, foxes, dogs, &c. The stags and hinds, above all, are remarkable

for the exactness of their proportions and the clearness of their outlines.

The Jemez pretend that these figures have no signification whatever; that they are mere ornaments, and in no way representations of any events of their political, civil, or religious history. But when we know the Indian character, we are led to doubt their sincerity. In these paintings there are signs and figures grouped so as evidently to indicate a fact or a remembrance, a complete idea. Thus, one of those pictographs represents the interior of a chapel dedicated to Montezuma. On the first story two men are seated opposite each other and blowing on a trumpet, no doubt to beg for rain; for, to the left of this painting is another, representing the same chapel, but this time without the two worshippers, and over the temple wherein they pray is painted a flash of lightning, with a dart, a token of storm, which probably shows that Montezuma has immediately granted the prayer of his faithful followers.

The narrow passes of the Chaco, the Chelly, and of all the valleys of New Mexico, as well as estufas, possess numerous inscriptions of all kinds indicating (except the Spanish ones) the same degree of civilisation, if not the same epoch. Amongst other inscriptions, that of the grotto in Rocky Dell has been already mentioned. The ceilings are covered with paintings, and the walls and floors with hieroglyphic figures. Among the most extraordinary is a naked man holding in one hand a tomahawk and in the other a sabre. On each side of his head he bears an enormous appendage, apparently ears. Another personage, probably the Great Spirit, is represented with wings, and a sun at the end of one hand. Besides this isolated picture, there are combinations of allegoric drawings,

signifying some historical fact. First is a ship with sails; then a man standing up on a horse, and an Indian with naked legs looking at him from behind; after which there are priests with crosses, and Spaniards.

Another representation, more complicated than the preceding, is composed of straight and crooked lines, of strokes, of arrows, of a sun, and of men and horses. The Indians relate that this spot was formerly a rendezvous for hunting, where their forefathers repaired to hunt the buffalo. After much rejoicing, they rested on the borders of a stream, and there traced on the walls of the grotto some historical episode. In these hieroglyphs they recognise Montezuma, placed here to sanctify and preserve the sources of the stream. They also see the great serpent created by Montezuma, to give rain and save the life of his worshippers. The men with horns on their heads represent the buffalo-dance, which Indian hunters, even in our days, perform before they set off for the hunt.

The hieroglyphics found in the Valley of William are very like those of El Moro and of the Rocky Dell, only that they seem less complicated; the scenes are more simple and abridged: the general signs are human faces, symbolical animals, hands, suns, and different sorts of lines.

On a rock of the Isle of Cunningham in Lake Erie, of which we have already spoken, are to be seen two hieroglyphic inscriptions engraved very deeply in the rock, and which do not appear very ancient, either from their state of perfect preservation, or from the subjects they represent, which belong to the manners and customs of Indians at the Columbian epoch. In the State of New York, near Esopus, there exists the large figure of an Indian engraved on the banks of the Hudson: but this inscription is not ancient, for the personage is armed with a gun.

In the environs of St. Louis, in the Missouri, has been found a perfect impression of human feet carved on a chalky stone of a bluish grey colour, of about eight or nine feet long and about five or six feet wide, which was extracted from a quarry. These impressions are exactly like those that have been copied on the terraces of the temples of Thebes in Egypt, of Karnak, and particularly Nakaur, in South Behar; but no one has as yet been able to discover what is the meaning, or who were the authors, of this singular sculpture.

Modern Red-skin ideography does not differ from the method in use amongst the ancient colonists of the united states of New Mexico: a little more or less address or natural talent in the formation of the lines of drawing is all the difference to be perceived between the hieroglyphic inscriptions of savages of our days and those of their ancestors. All past and present generations have engraved or engrave their historical remembrances and religious thoughts on granite stones, in deep and obscure glens, where the sky appears only as a slight azure riband floating over shapeless mountains whitened by the sun or burnt by volcanoes; desert and wild regions which one likes to contemplate, far from worldly-minded men, by whom the wonders of Providence are valued only according to their utility. How often, when admiring the poetry of Nature, have I been led to reflect sadly on the origin, actual state, and future prospects of the interesting populations of these countries, on finding, while working my way in the midst of this tropical vegetation, both awful and fantastical, on an isolated rock or aged cedar, some of those apparently childish essays!

Indians are still children of a savage nature, whom the Pale-faces try to render wicked and cruel, so as to find

pretences for stripping them of their property, and justify the brutishness in which they are left. But good or bad natures are not easily changed; and in spite of the efforts, persecution, and contempt of white people, the Red-skins' abasement is as yet incomplete. There are even tribes who vigorously resist this destructive torrent, and some, moreover, who profit by their contact with Anglo-Saxon civilisation to advance in industry and art. Thus the Iroquois have already improved their ideography in a most surprising manner. I have seen originals and fac-similes of their pictography that are of a pretty good artistic execution. The representation of an Iroquois dance, mentioned by Mr. Schoolcraft in his great work on the Indians, which was executed by one of those savages, denotes real knowledge of the human form and anatomical proportions. The faces are correct and very characteristic. There is much imagination in the composition, and suppleness in the outline. This dance is, perhaps, the master-piece of Red-skin modern ideography. Some Iroquois and even Chippeway drawings recall the figures on the Etruscan vases, though they are still far from the perfection of those Italian productions.

The Iroquois of every age were clever at symbolising their ideas. When Count de Fontenac, at the head of a small army, invaded that country, he found on the borders of the Oswego a tree on which was represented the French army. At the foot of the tree the soldiers found faggots, composed of 1434 little branches, indicating the number of enemies they had to encounter.*

In 1759 or 1760 a party of Americans set out to surprise a celebrated Indian, named Natanis, probably of the

* This fact has been confirmed by several historians of Canada.

Abenakies tribe, and entered his house, which they found empty; but close to it, on the border of the river, they met with a map, engraved on the bark of a reed, and suspended on a little stick. On this map were very accurately described the current of the stream, and the best strategic points for passing it towards Canada. The Americans did not fail to avail themselves of this discovery, which proved that the Indians were not so ignorant as people were fain to believe. Latterly, on the borders of a tributary of the Susquehanna, was found another map, engraved on stone. This discovery was made in the country of the Lenapes, who are much given to the art of engraving, which they call *ola-walum*.

It may be remembered, that when the Natchez resolved to massacre all the French, the Great Sun sent bundles of little sticks to all the Suns of the neighbouring tribes, to make known to them how many days were to pass before the massacre took place: each day was indicated by one of those sticks, which, to avoid mistakes, was broken to pieces every morning. It was thus that by all sorts of simple and ingenious means the Indians expressed their ideas. But it is better not to wander from a subject well worthy of attention.

Although the Red-skins and their ancestors have made but little progress in the art of rendering their meaning by signs and figures, nevertheless the symbolic representations of which they make use are arranged in the systematical and uniform manner which is to be found in all the tribes of the American continent.

Indians have, like the Egyptians, hierarchical or sacerdotal signs, as well as demotic or vulgar signs; their figures are generally kyriologic lines, that represent an

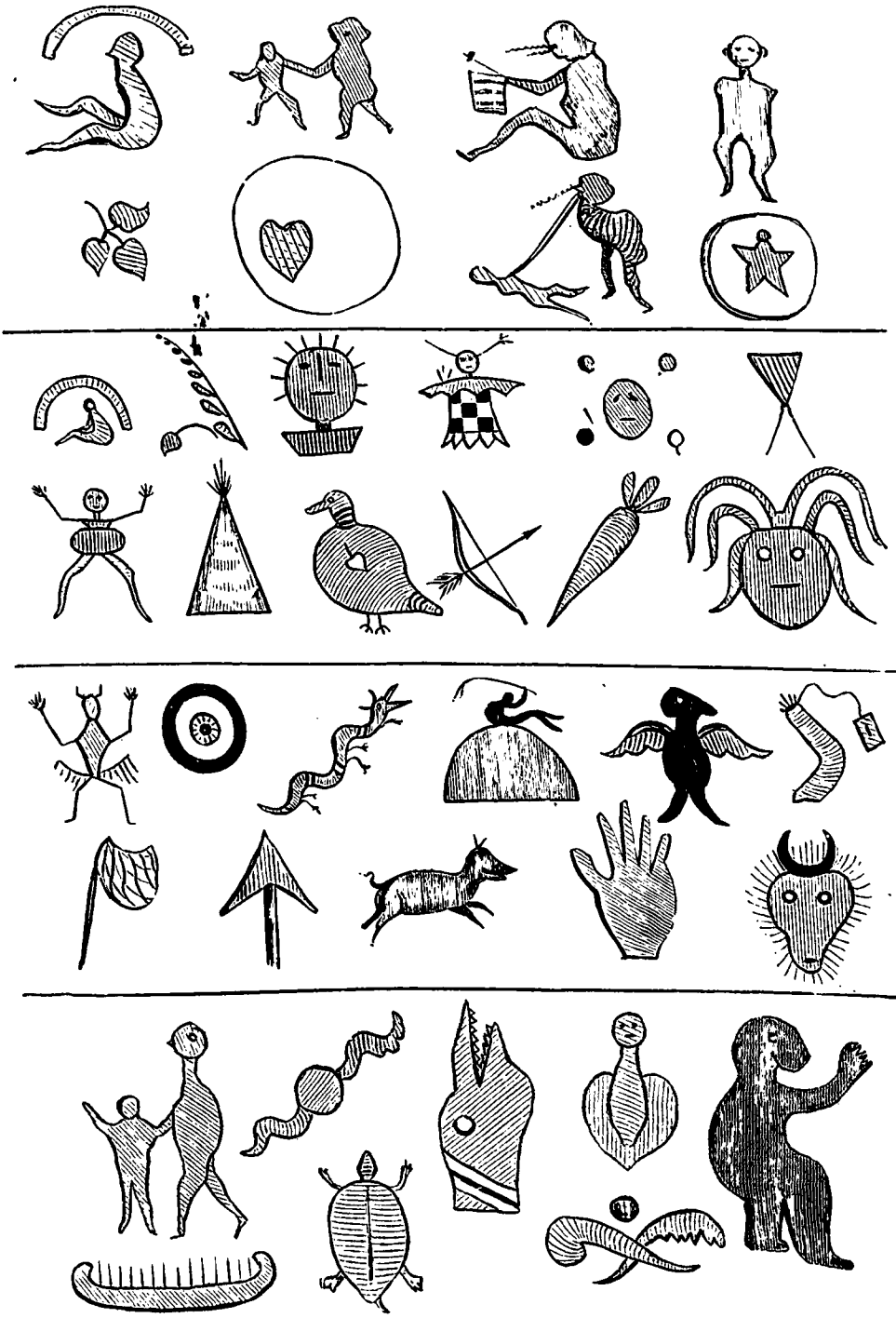
object as it really is, and symbolic or allegoric signs, representing the subject with a typical, ideal, or conventional form. They have also mnemonic signs. Some writers even pretend that among the Algonquin tribes there exist songs written in phonetic characters; it is indeed a positive fact, but it is also an exception, and not a general custom. The same may be said of the pretended secret pictography, for the use of the *medicine-men* of the northern tribes.

Indian pictography is not a determined science, with rules and fixed laws; it is the first step made by an infant people to get out of barbarism, and to write the simple annals of a history that is beginning. From this effort of a young intelligence, nature guiding alike all individuals in the same condition, it follows that having no other teacher than the natural tendency of man to push forward towards perfection, the Indians, in all the different parts of America, have represented, in a manner almost analogous, ideas, facts, tenets, precepts, and even sentiments.

Nowadays the Red-skins do not so often trace their ideas, annals, and remembrances on rocks as on trees*, and on the skins which they make use of for their garments and for their tents. Most warriors have their exploits represented on their cloaks, their tunics, or their wigwams. One seldom sees a garment on which there is no black, yellow, red, white, or blue drawing, representing guns, lances, heads of hair, arrows, shields, the sun, the moon, men, horses, roads, and sometimes mythological subjects.

We possess some cloaks of Comanches made of buffalo skins, the inside of one of which was covered with kyriologic

* They prefer above all the bark of white birch, called *Betula papyracea*, which is to them what the papyrus was to the Egyptians.



INDIAN HIEROGLYPHS.

signs, which, previously to being painted, were slightly cut in the thickness of the leather with a sharp instrument. On the upper part of one cloak was an Indian holding in one hand a scalping-knife, in the other a head of hair; at his feet were eight human skulls, which denoted that he had killed eight enemies. On another cloak was painted a disarmed warrior in front of a chief with all his insignia, and brandishing a lance over his head; round the two adversaries were marks of red moccasins, denoting that some Indians had assisted at the single combat between the two chiefs; the totems indicate their names. A third pictograph represented an immense sun, round which unrolled the panorama of the baptism of a shield by fire, a ceremony of which more shall be said hereafter.

The priests, magicians, or *medicine-men*, in their writings, make use of signs like those of common people; but their graphic art is more developed, so that the historical or prophetic annals, the mysteries of necromancy, and the written songs of medicine-men are far more difficult to decipher than the simple narrations of warriors and other people. Above all, their sacred songs, almost exclusively composed of phonetic signs, are so fantastic, singular, and uncertain, that great practice and patience can alone enable one to understand their signification.

The totems (pronounced dodems), of which mention has already been made several times, are symbolic names, generally employed to designate a clan or a family, and not a person, though it is mostly only the head of the clan or family who makes use of this sign, whether as private seal, signature, or mark of distinction. The word totem is derived from a generic word of the North-Indian language which means town or village, and accords with the word house, taken in a heraldic sense. In fact, the

totem is a true sign of blazonry, and represents both the arms and mottoes of the great families of savages. People that have the same totem cannot marry together, nor change their heraldic signs for others. When in a question of marriage, from the degree of consanguinity or affinity that exists, it cannot be known if the union may take place, the totem settles the difficulty.

This division of tribes into clans, as in the highlands of Scotland, exists among the Red-skins from time immemorial. The emblem or totem is generally a quadruped, a bird, a fish, or a reptile. It is seldom a plant, a tree, or an inorganic body. At the death of the head of a great family, when a funeral post or stone is placed to mark his tomb, on the post or stone is painted the totem of the deceased upside down. This kind of epitaph is very easy to read.

There are some hieroglyphics which may be called totemic (totems being their chief signs and characteristics). They generally show a sort of unity of thought and intuition and that in a very simple manner. It is a systematic mode of arrangement, common to all the northern tribes. We have seen the representation of a Chippeway emigration, passing through rivers, forests, and mountains, on their way from the borders of a lake to a more civilised country. This scene was painted by the savages themselves (on a bark of reed), with the most singular simplicity. In the lower part of the picture were several little blue lakes, near together; a little higher, a large river of the same colour, passing through from east to west. Above the river were creeks and trees, symbols of forests. Tumuli, imitating mountains, were represented here and there; and, finally, at the summit of the picture, were a dozen animals (totems of the Chippeway chiefs) placed behind

each other, each bearing on his breast a heart, painted red. From the eyes and hearts of these emblematic animals were drawn black lines, which went to the eyes and heart of the commander of the expedition, whom they thus designated. There were also two other lines in this pictograph. The first rose from the inferior lake to the eyes of the animal that guided the others; the second, from the same animal's heart, penetrated into a cabin situated opposite him. It is almost unnecessary to explain this scene, the artist's intention is so clearly and simply rendered.

The black lines converging towards the same spot symbolise unity of intentions, ideas, and sentiments, among the Chippeway chiefs (represented by their totems), in the execution of the project for which they quitted the solitary borders of the lake on which they dwelt, to settle in a civilised country (figured by the cabin), under the guidance of the chief that headed them.

There are totems that represent ideas more or less abstract; but the symbols of these ideas are of such an arbitrary form, that they can only be approximately guessed at by induction and from notions already acquired. Thus, "The wind that blows" (the name of an Ottawa warrior) is symbolised by a willow leaf crossed with oblique rays; "The rising of Aurora" (the name of another chief) is represented by a swan shaking its wings; "The rolling thunder," by zigzags, like the bolts placed in eagles' claws, &c.

One could fill volumes with descriptions of the signs of savage blazonry and symbolised thought, which Indians trace in profusion on the American continent. Whether on isolated rocks, or on those watered by streams or lakes; whether on the aged trees of their immense forests, where man's hatchet has not yet penetrated, or on the

walls of the Red Pipe-stone Quarry, where the Indian engraves his name or emblem as an *ex voto* agreeable to the Great Spirit; from the Atlantic to the Pacific, from Canada, the snow country, to the balmy shores of Florida, everywhere those despised Red-skins, whom civilised men brutalise and then murder, leave profound traces, in their passage through those solitudes, of their piety towards the Creator, of their exploits on the fields of battle, of their mysteries and poetic aspirations. But time and moss cover the rocks; torrents of rain wear out the stones; trees fall and rot: and thus little and little are blotted out those vestiges of the infancy of a people that became extinct before arriving at the age of manhood.

CHAP. XXII.

INDIAN STATISTICS.—CAUSES OF THE DECREASE OF THE INDIAN POPULATION.—NOMENCLATURE OF THE INDIAN TRIBES.

BEFORE we begin the historical accounts, and the descriptions of the manners and customs of the Indians of the present day, we will finish this part of our work with a few words regarding the statistics of the Red-skins. Two centuries ago the Indians of North America numbered about 16,000,000 or 17,000,000 souls, without including those of Mexico; since that period civilisation has deprived them of two thirds of their territory. Iron weapons, fire, brandy, small-pox, and cholera have also made upwards of 14,000,000 of victims among them. Some American authors admit that since the arrival of the Saxon race in Northern America wars and maladies have destroyed about 12,000,000 of the Red-skins. Certain it is, that since the end of last century the Indian population has greatly diminished; nevertheless not one of the tribes that existed at that epoch has been completely annihilated.

The principal agent in the destruction of that unhappy people is the "fire-water;" such is the name they give to whisky, a kind of bad brandy distilled from maize and fermented barley. The American Government, prompted by a praiseworthy sentiment of humanity, promulgated laws forbidding, under very severe penalties, the intro-

duction of alcoholic liquors among these people; but the greater number of the official agents who reside with the Red-skins interpret those decrees according to their own ideas, and do not molest the merchants, asserting that "the Indians are not men in the eyes of the law." Owing to this mode of reasoning, torrents of whisky are allowed to flow in among the tribes, to whom this fatal liquor becomes a daily source of crime, drunkenness, debasement, and murder. Intoxication renders the savages furious and ferocious; they fight, bite, and kill one another. Should they find no one with whom they can quarrel, they turn against their wives and children, and these poor creatures are obliged to take to flight and hide in the woods.

The following speech pronounced by Grangulakopak, the "great warrior," in a grand council of the Creek nation, will show us in what light the intelligent Indians consider the introduction of whisky into their country:—

"Fathers, brothers, and fellow-countrymen,—We have assembled to deliberate; but on what subject? On a subject no less important than to know if we are to be a nation or not! I do not rise to propose a plan of battle, or to direct the wise experience of this assembly concerning the arrangements taken with regard to our alliances. Your wisdom renders this task useless for me. The traitor, or rather the tyrant, that I desire to unveil before you, O Creeks, has not taken birth on our soil; it is a miscreant that tries to conceal itself, an emissary of the wicked spirit of darkness. It is that pernicious liquor, which our pretended friends, the Whites, have so artfully introduced, and poured in so abundantly amongst us. O, you Creeks! when I thunder this denunciation in your ears, it is to warn you that if that cup

of perdition be suffered to prevail in our land with such fearful power, you will cease to be a nation; you will have neither heads to direct you, nor hands to afford you protection. While that diabolical juice undermines your bodily strength and weakens your intellect, the zeal of your warriors will become inoffensive, their enfeebled arms will no longer be able to send the arrows or wield their weapons on the days of combat. In the days of council, when the national security will depend on the words that fall from the lips of the venerable Sachem, he will shake his head with a distracted mind, and his discourse will be no more than the lisp of second childhood."

The small-pox was first introduced among the Indians in 1837 by the white men. In the space of one month it carried off from among the Biccarees, Assinniboins, Crows, Mandans, Minetarees, and Black-feet, upwards of 12,000 persons. The scourge spread consternation and despair throughout these populations. Many people, arrived at the climax of agony, were seen to plunge daggers into their breasts; others threw themselves down precipices, or rolled on the sand, uttering at the same time most piteous cries; whilst others precipitated themselves into the cold water of the lakes or rivers, where they met with their death instead of the alleviation they had hoped to find from the internal fire that consumed them.

Intestine wars have become less frequent since fire-arms were introduced among the Red-skins, so that henceforth we cannot rightly attribute the decrease of the population to these struggles; for that population, far from diminishing, would on the contrary augment, if an intelligent civilisation, adapted to the character and mode of existence

of these tribes, came to their aid. It is a fact worthy of note, that the isolated Indians who live in a condition of positive well-being, multiply in a most remarkable manner. For instance, among the Cherokees who inhabited the State of Georgia before their forced emigration to the frontiers of Arkansas, the annual number of births compared with that of the deaths was, on an average, 700 for 10,000 souls.

We shall also cite as a last cause of the depopulation of the Indian race, *its forced emigration.* The Red-skins are only roamers through necessity; they are passionately fond of the place of their birth, and the soil wherein rest the ashes of their ancestors. With a few slight exceptions, the tribes still live in the same countries that they have inhabited from time immemorial. The insufficient quantity of game, or any other material reason, would not induce the Indians to emigrate, if the American Government did not force them to it, by expatriating these unfortunate people from their native land and sending them into distant countries quite unknown to them. During those compulsory emigrations, the women, the children, and the sick are thrown pellmell into waggons among the baggage, the men walk or go on horseback, escorted by dragoons or by volunteers, who, considering the emigrants as malefactors, often treat them with the most revolting brutality. Many of these poor creatures die during the route from grief, fatigue, sufferings, hunger, and thirst, or overpowered by the great heat. Hundreds of Indians have been thus carried off during their emigrations; the old men and women, and the infirm, sunk under the weight of their miseries, which were so much increased by the privations and fatigues of the journey. Multitudes also were swallowed up in the waters of the Mississippi.

Among other facts of this kind we may cite that of the Monmouth, a steam-boat which was freighted on exceedingly moderate terms, as it had been condemned on account of its great age: 600 Indians were embarked on it to be transported to the right bank of the Mississippi; the steamer came in collision with another craft and was immediately sunk: 311 Indians perished by that accident. Along the route women may be seen in an agony of sorrow, bending over the lifeless bodies of their husbands, or over the graves of their children; but they are dragged by force far from the beloved remains of the objects of their affection. The wife of the celebrated chieftain Ross died of a broken heart before she reached the land whither the Government was sending her. Several others met with the same fate. The survivors arrive mournful and dejected in the territory assigned to them by the contract of sale. They gradually abandon their old customs and usages to imitate the Pale-faces; for the buffalo and deer being rare in those countries, they are obliged to till the ground for their sustenance. They lose by degrees their original character, and only preserve their costume, which is often modified by stuffs of European manufacture.

This sort of life being in direct opposition to their taste and nature, they merely plant whatever maize and vegetables they require for their food, and even in so doing they work with as much indifference as convicts condemned to the hulks. Sad and downcast, they sit on the threshold of their cabins smoking the red pipe of the *Sacred Fountain*, and silently gaze on the silvery spirals of smoke ascending from the tobacco of the Whites, and fading away in the air, as they had looked upon the dying glory of their ancestors. Old traditions recall

painful regrets to their mind, which overwhelm them with sorrow, the more intense as it causes them to feel more deeply the weight of their position. The memory of the past, with its joyful dances, its animated festivities, its dangerous hunts, and heroic combats, only tends to augment their gloomy melancholy. It is then that they give way to intoxication to drown grief, and forget the days of their liberty and independence. Merchants from all directions offer them that hideous poison they call *fire-water*, and the Indian drinks it with avidity, for hatred, fury, and despair are in his soul; but henceforth, powerless and unable to call vengeance to his aid, he prefers to die besotted and degraded, rather than live with those noble passions which were heretofore his glory and his pride. In this long moral and physical suicide, it must be confessed he is powerfully seconded by American civilisation and the sordid interest of the Whites, who still covet the corner of earth he occupies, and the rich furs he finds in the solitudes of the New World.

The Indians are so much opposed to those forced emigrations that a chieftain named Hicks was put to death by the warriors of his tribe, for having held intercourse with the Whites regarding the change of territory. The celebrated Osceola declared, in a council of his nation, that whosoever should speak in favour of emigration would be considered as the enemy of his tribe. What the Indians would not do of their own free will, they were, nevertheless, compelled to submit to from others, for the Government agents employed force and treason against them, with all the constancy of an inflexible determination; but it was not without crime on the side of the latter, and desperate resistance on the part of the

Red-skins. Two thousand four hundred Cherokees were embarked *en masse* at Montgomery (Alabama) for Arkansas; in such a large assemblage of individuals thus forced into exile, and obliged to abandon for ever the land of their forefathers, it is not possible to suppose that many did not show repugnance to embark. We do not know in what manner that repugnance was manifested, but it is a positive fact, that twelve or fifteen Indians were chained to prevent their escape. One of them, unable to endure such an outrage, disentangled himself, and laying hold of a club struck at the heads of his tormentors, then shouting the war-cry he endeavoured to take to flight, but was soon killed by a musket shot. One of his companions received a thrust of a bayonet. The same night three Indians escaped: one of the fugitives was retaken, and he preferred cutting his throat rather than to follow the convoy and his cruel guides. But let us throw a veil over these scenes of barbarism and despair, so revolting to the feelings, and which cause the heart to sicken with disgust when we reflect that those atrocities are only to be seen in a country where liberty is said to have its greatest development and its most complete application.

It is difficult to give the exact number of the actual population of the Indians of North America, for all the data relating to this subject are only approximative. The official census is incomplete with regard to the tribes that do not inhabit the interior, or the immediate vicinity of the United States, as likewise those with whom the American Government has no intercourse. The nomadic life of the majority of the Red-skins, the distrust they entertain for the Whites, and the difficulty of understanding accurately the numerous Indian dialects, cause the information gleaned from the chiefs to be incorrect,

for it is either exaggerated or insufficient. After having studied all the statistics, both public and private, that have been drawn up by the different compilers, we think we may affirm that the actual number of Indians nearly amounts to two millions of souls.

The only general statistics that we have found in the Annals of the Propaganda of the Faith give the following figures:—

Indian Population.

East of the Mississippi	81,236
To the west of the same river	265,567
On the south, Texas and Mexico	2,600,000
On the north, British and Russian possesssions	1,400,000
General total	4,346,803

We believe this total to be greatly exaggerated; for the south, even including Mexico and the north, is less populous than the west, wherein are the great centres of the Red-skins, and the Indian territory properly so called. The western declivity of the Rocky Mountains and New Mexico contain between them upwards of 200,000 Indians, and the frontiers of Arkansas and of Missouri above 200,000. These figures equally convince us that Mr. Schoolcraft's statistics are incomplete. That eminent American writer, in his official report to the Government at Washington, traced out a series of lists, in which the tribes and their populations are classified by groups. We have summed them up in the following manner:—

Groups.	Number of Tribes.	Indian Population.
Iroquois	15	6,000
Algonquins	14	17,000
Dacotas	32	7,000
Appalachians	11	5,000
From Texas	17	30,000
From New Mexico	41	93,000
Of California	18	33,000
Of Oregon	59	23,000
From Florida	5	500
From Utah	7	11,500
Total	219	226,000

To this nnmber Mr. Schoolcraft adds 30,000 Indians for the unexplored countries, which produces a total of 256,000 souls. At a later period, on revising his statistics, the learned author made corrections and additions which carry the definitive total to 423,229 Indians. But the enormous difference that exists between this number and the first, as likewise the analysis of certain groups, amongst others that of the Dacotas which has only 7,000 for thirty-two tribes, convince us that this general total amounts to but a quarter of the real number of the Indian population. We therefore agree with some writers who put the number at 2,000,000, including the British possessions.

The Indians are divided into nations and tribes. The name of nation is given to those tribes that derive their origin from the same stock. For instance, the Snakes, the Comanches, and several other peoples of New Mexico, Upper California, and Texas, came from the Shoshonees nation. The tribes, in their turn, are divided into bands or villages; they sometimes give up their primitive name for that of the country they inhabit, or of the river

near which they dwell. Some tribes have but one village, and others have many. The bands are frequently composed of 100, and even 500 lodges, wigwams, or tents. A greater agglomeration of families would render a long sojourn in the same place impossible, as these tribes live exclusively on the products of the chase. Each lodge contains, on an average, ten persons. As to the warriors, their number varies according to the position and condition of the Indians. In general, every fourth man is one, and sometimes every fifth. Among the poorer tribes, or those surrounded by hostile nations, we often find but one out of every ten or twelve individuals; for warfare, hunting, and other fatigues cause a great number to perish.

There are also confederations formed by one great tribe and by several smaller ones, that writers sometimes confound and mix up together as if they were but one and the same tribe; but this error could not exist if they were examined attentively, for in these confederations, which were formed with a view to mutual protection and preservation, you often find great differences in the languages, customs, usages, and traditions. The divisions of the tribes that in the beginning only formed one people were brought about by various causes. In a war, or during a great hunt, there must have been a number, more or less considerable, of individuals separated from the principal corps, and the reunion of the parties afterwards offering too many difficulties and dangers, the fractions must have established themselves in the countries which afforded them the best security and resources. Notwithstanding this separation, the languages and the religious and historical traditions were perpetuated in the families. It is thus that the Ojibbeways are recognised

to be a section of the Chippeways. The Assinniboins have a similar relationship to the Sioux, and several other tribes are in the same predicament. Another no less real cause of this division is the absolute independence of the Indians; there is no tie whatever, even between the members of the same tribe, which obliges them to live together; therefore, prompted by the instinct of preservation, they evidently must have determined on separating to seek their food elsewhere, it having soon become scarce in a densely peopled country.

The tribes that have preserved up to the present day a special name, are yet very numerous. It is true that the greater part are almost extinct, and that they are now limited to a few families; nevertheless, many still remain that have preserved their power, their prestige, their traditions, their manners and usages. We shall finish this chapter with the nomenclature of the tribes of North America that are known to us, either by history, by our personal journeys, or by the accounts of the trappers and voyageurs, on whose authority we can fully rely. We feel confident that we have succeeded in so satisfactory a manner in our researches, as to be almost sure that not one tribe has escaped our investigations, and that all are represented in our list.

Indian Tribes of North America.

Abekas.
Abenakies.
Absorokas.
Accokesaws.
Acomaks.
Adaïzes.
Adirondaks.
Affagoulas.
Agawoms.
Ahwahaways.
Ajoues.
Alansars.
Algonquins.
Aliatans.
Aliches.
Allakaweahs.
Allibamas.
Amalistes.
Anasaguntakooks.
Andastes.
Apaches.
Apalachicolas.
Appalousas.
Aquachachas.
Aquanuschionis.
Arapahoes.
Armouchiquois.
Arrenamuses.
Assinniboins.
Atenas.
Athapascows.
Atnas.
Atsinas, or Gros-ventres.
Attacapas.
Attapulgas.
Attikamigues.
Aucosiscos.
Aughquagas.
Auxumnes.
Ayanais.
Ayutans.

Babinas.
Baqui-obas.
Bayagoulas.
Bedies.
Benemes.
Big-devils.
Biloxis.
Black-feet.
Blanches.
Blood-Indians.
Blue-muds.
Bonnacks.
Brotherton.

Caddoes.
Cadodaches.
Caïwas.
Cajuenches.
Calaveras.
Callapuyas.
Callimixes.
Calasthocles.
Canarsees.
Cances.
Canibas.
Carankonas.
Carees.
Carriers.
Castahanas.
Catakas.
Catawbas.
Cathlacumups.
Cathlakahikits.
Cathlakamaps.
Cathlamaks.
Cathlanamenamens.
Cathlanaquiahs.
Cathlapootles.
Cathlapooyas.
Cathlaskos.
Cathlaths.
Cathlathlas.
Cattanahaws.
Caughnewagas.
Cayugas.
Chactas.
Chactoos.
Chaonanons.
Cheegees.
Chemeguabas.
Chemeques.
Chewaws.
Chepeyans.
Cherokees.
Cheskitalowas.
Chickassas.
Chikeelishs.
Chikahominis.
Chikamaugas.
Chilcotins.
Chillates.
Chillukittequaus.
Chiltz.
Chimnahpums.
Chinnooks.

Chippanchikchiks.
Chippewais.
Chiricaguïs.
Chitimichas.
Chopunnishs.
Chowanoks.
Chowans.
Clahclellahs.
Clakstars.
Clamoctomicks.
Clanimatas.
Clannarminimuns
Clatsops.
Clarkames.
Cneis.
Cochimies.
Coco-Maricopas.
Cohakies.
Colapissas.
Comanches.
Comeyas.
Conchattas.
Congarees.
Connewangos.
Conoys.
Cookkoo-ooses.
Coopspellars.
Coosadas.
Coppers.
Corees.
Coronkawas.
Cosninos.
Cosumnes.
Coneliskes.
Cœurs-pointus.
Creeks.
Crees.
Crows.
Cuabajais.
Cucapas.
Cuchans.
Cuchanticas.
Cuneils.
Cutsahnims.

Dacotas.
Delawares.
Diegeños.
Dinondadies.
Doegs.
Dogribs.
Dogs.
Dotames.

Echemins.
Edistoes.
Emusas.
Eneshures.
Eries.
Esaws.
Eskeloots.
Esquimaux.
Etohussewakkes.

Facullies.
Falls.
Flat-bows.
Flat-heads.
Fond-du-lac.
Fowl-towns.
Foxes.

Ganawses.
Gayheads.
Genigneihs.
Gileños.
Grand-River.
Guallivas.
Gualtas.
Guamoas.
Guananesses.

Hare-foot.
Hallibees.
Hannakallals.
Hassanamesits.
Hihighenimmos.
Helwits.
Herring-pond.
Hietans.
Hinis.
Hitchittees.
Hohilpos.
Huecos.
Humas.
Hurons.

Illinois.
Inies.
Ioways.
Iroquois.
Isamishs.
Isatis.
Ithkyemamits.

Jacons.
Jantamais.
Jelans.
Jemez.
Jumbuicrariris.

Kadapaus.
Kahunkles.
Kalapuyas.
Kalispels.
Kaloosas.
Kanenavishs.
Kanhawas.
Kansas.
Kaskaskias.
Kaskayas.
Kattekas.
Kawitshins.

Keekatsas.
Kenas.
Kettle-Falls.
Keyches.
Kiataws.
Kiawas.
Kichais.
Kigenes.
Kikapoos.
Killamuks.
Killawats.
Killaxthocles.
Kimoenims.
Kinais.
Kiskakons.
Kites.
Klalams.
Klamaths.
Knisteneaux
Kœtenays.
Konagens.
Kullespelms.
Kuskarawaoks.
Kwaitlens.

Lahannas.
Lartielos.
Leafs.
Leech-River.
Lenni Lenapes.
Lipans.
Lipiyanes.
Llaneros.
Loucheux.
Lukawis.
Lukkarsos.
Luktons.
Lutuanis.

Machapungas.
Mandans.
Mangoags.
Manhattans.
Mannahoags.
Marachites.
Marsapeagues.
Marshpees.
Mascoutins.
Massachusetts.
Massawomes.
Mathlanobs.
Mayes.
Menomonies.
Mescaleros.
Messassagnes.
Miamis.
Mikasaukies.
Mikmaks.
Miksuksealtons.
Mimbreños.
Minetaries.
Mindawarcartons.
Mingoes.
Minsis.
Missouries.
Mitchigamies.
Mohawks.
Mohicans.
Mojaves.
Mokelumnes.
Moleles.
Monacans.
Mongoulatches.
Monquis.
Montagnes.
Montauks.
Moquis.
Moratoks.
Mosquitos.
Multnomahs.
Munseys.
Muskogees.
Nabedaches.
Natajes.
Nandakoes.
Nantikokes.
Narcotahs.
Narranganseets.
Nashuyas.
Naskotins.
Natchez.
Natchiloches.
Natcotetains.
Natiks.
Natliautins.
Navajos.
Nechacokes.
Neekeetoos.
Nemalquinners.
Ninantiks.
Nicariagas.
Nikozliautins.
Nipercinians.
Nipissins.
Nipmuks.
Nisqualies.
Noatches.
Nootkas.
Norridgewoks.
Notches.
Nottoways.
Ntshaautins.
Nulaautins.
Nyacks.

Oakmulges.
Oscameches.
Oconas.
Ogallallas.
Ojibbeways.
Okatiokinans.
Okinaganes.
Omahas.

Onondagas.
Ootlashoots.
Osages.
Otagamies.
Otoes.
Ottawas.
Ouiatanons.
Oumas.
Owassissas.
Ozas.
Ozimies.

Pacanas.
Padoucas.
Padowagas.
Païlishs.
Palaches.
Palaïks.
Palooses.
Pamlicos.
Pancas.
Panis.
Pannehs.
Papagos.
Pascataways.
Pascagoulas.
Passamaquoddies.
Pah-Utahs, or Pah-Utes.
Pawnees.
Pawistucienemuks.
Pawtuckets.
Pecos.
Peganes.
Pelloatpallahs.
Penobscots.
Pennakooks.
Peorias.
Pequakets.
Pequots.
Pericues.
Phillimees.
Pimas.
Piankashaws.
Piankatanks.
Pineshows.
Pischous.
Pisquitpaks.
Ponkahs.
Potoashs.
Pottowatomies.
Powhatans.
Punashlies.
Pueblos (Indians of the), 22 tribes, residing at:
Acoma.
Chilili.
Cochitè.
Cuyamanque.
Isleta.
Jemez.
La haguna.
Pecos.
Piçuries.
Pojuaque.
Nampè.
Sandia.
Santa Ana.
Santa Clara.
San Domingo.
San Felipe.
San Ildefonso.
San Juan.
Silla.
Taos.
Tezuque.
Zuñi.

Quaboags.
Quapaws.
Quathlapohtles.
Quatoghies.
Querès.
Quiectsos.
Quinilts.
Quinnecharts.
Quinnipissas.

Redgrounds.
Redknife.
Redsticks.
Redwind.
Ricaries.
River.
Roundheads.
Ryawas.

Sachdagughs.
Sacs and Foxes.
Sahaptins.
Sankhikans.
Santies.
Sapetans.
Saponies.
Satsikaas.
Saukies.
Savannahs.
Scattacooks.
Selishs.
Seminoles.
Senecas.
Sepones.
Seris.
Serrannas.
Sewees.
Shallalahs.
Shallattoos.
Shanwappones.
Shastis.
Shawanos or Shawnees.
Sheastukles.
Sheyennes.

Shinikooks.
Shoshonies.
Shotos.
Sicaunies.
Sinpoils.
Sioux.
Sissatones.
Sitkas.
Skaddals.
Skalzis.
Skilloots.
Skitmishes.
Skunnemokes.
Smokshops.
Snakes.
Sogups.
Sokokies.
Sokulks.
Soones.
Souriquois.
Souties.
Soyennoms.
Spokanes.
Squannaroos.
Staetans.
Stockbridge.
St. Francis's
St. John's.
Susquehannocks.
Sussees.
Symerons.

Tabiachis.
Tahkallies.
Taihailis.
Tahsagroudies.
Tahuacanas.
Talchedums.
Talkotins.
Tallahasses.
Tallewheanas.
Talliguämais.
Tamajabs.
Tamarones.
Tamatles.
Tapiels.
Taracones.
Tarratines.
Tatshiantins.
Tattowhehallys.
Taukaways.
Tawakenoes.
Tawaws.
Tecuiches.
Tejones.
Tejuas or Tiguex.
Telmocresses.
Tenicuecches.
Tenisaws.
Tetons.
Tepocas.
Tiburons.
Timbachis.
Tionontalies.
Tiqui-Llapais.
Tiransgapuis.
Tketlcotins.
Tlamans.
Tlamaths.
Tockwoghs.
Tonicas.
Tonkahaws.
Tonkawas.
Tontos.
Topofkies.
Toteros.
Towalumnes.
Towoashes.
Tsakaïtsetlins.
Tsathls.
Tsatsnotins.
Tukabatches.
Tunicas.
Tunxis.
Tupes.
Tuscaroras.
Tushepahas.
Tutseewas.
Twghtwees.

Uchees.
Ufallahs.
Ugaljachmutzis.
Ulseahs.
Umquas.
Unalachtgo.
Unamies.
Unchagogs.
Upsarokas.
Utahs.

Waakicums.
Wabingas.
Wahlah-wahlahs.
Wahowpums.
Wahpatones.
Wahpacootas.
Waillatpus.
Wamesito.
Wampais.
Wampanoags.
Wappatoos.
Wappings.
Waranancönguins.
Washaws.
Watepanetos.
Waterees.
Watxlalas.
Wawenoks.
Waxsaws.
Weas.
Wekisas.
Westoes.

Wetepahatos.
Wheelpos.
Whirlpools.
Wichitas.
Wighcomeges.
Willewahs.
Winnebagos.
Wolfs.
Workons.
Wyandots.
Wycomes.
Wyniaws.

Xicarillas.

Yabipaïs.
Yacones.
Yamacraws.
Yamassees.
Yampaïs.
Yampaxicos.
Yamperacks.
Yattassees.
Yavipais.
Yazoos.
Yeahtentanees.
Yehahs.
Yeletpoos.
Yongletats.
Yonktons.
Youicomes.
Yumas.

Zaguaganas.
Zingomenes.
Zuñis.

END OF THE FIRST VOLUME.

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